



# CHANGING LAND USE PATTERN AND RURAL TRANSFORMATION IN EASTERN UTTAR PRADESH

## ABSTRACT

### THESIS

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By

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Under the Supervision of

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## ABSTRACT

Importance of agriculture in the context of economic development has been debated since long time. Agriculture forms the only part of economy that produce a surplus above the current requirements of labour and capital employed. Agriculture sector, besides being a prime source of food, is also a source of raw materials for expanding industries. Agriculture development would lead to an increase in the purchasing power of the rural poor and the growth of non-agricultural sector by providing a marked increase in production from industries. Agricultural sector carries a double obligation to increase production, and to provide capital for other sectors in order to promote economic growth, while at the same time, it must provide for the welfare of the farmer and their families.

Agriculture being the largest industry and main occupation of the people of Eastern Uttar Pradesh has an important place in the economy of the state. The struggles in land and production have effects, which ripple over all other sectors. Social and economic policies in agriculture set the tone and momentum of the whole national economy; therefore, there is considerable debate about land use. Land use is perhaps the most basic concept of agricultural economy. It is a key to the understanding of geographic adjustment of the agricultural resources. Moreover, regional land use patterns are the geographical expression of a large number of societal decisions made at different times for very different reasons which are responsible for an expansion of one category of land use at cost of other. Land use in any region of the world varies due to the variations in the distribution of sunshine, rainfall, topography of the land, drainage

conditions, and soil characteristics of the region. The spatial differentiation in these elements affects the purpose of land use for agriculture.

The Eastern Uttar Pradesh presents more or less uniform characteristics of physical environment in its structure, relief, climate and soil. Basically it is a plain area. Swampy and marshy lands formed by the deposition of the final materials of the rivers, produce the Terai area. The numerous tributaries of Ganga and Ghaghra rivers form the drainage network. The general flow of the rivers is west to east. The floods are quite regular due to gentle gradient. The region of Eastern Uttar Pradesh still remains under developed despite of its well balanced surface, alluvial land, dense drainage network and abundant manpower resources. The main economic activity in the region is agriculture which provides a source of living. The increasing pressure of population has almost slowed down the economic development and poverty of Eastern Uttar Pradesh has become proverbial in the country. To remove the backward status of agricultural development in the region, more comprehensive approach to agricultural development has been pronounced where in geographical condition in general and technological determinants in particular have been made responsible. The above mentioned two characteristics which provide a base for special variations not only in agricultural productivity but also in agricultural landscape.

Eastern Uttar Pradesh is an important part of Uttar Pradesh. It spreads from 23° 45' North to 28° 20' North latitudes and 81° 5' East to 84° 36' East longitudes. Eastern Uttar Pradesh is bounded by Nepal in the north by Central region and Bundelkhand region in the west, Madhya Pradesh and Chhattisgarh in the south and Bihar and Jharkhand in the east. The northern

limit of this region is bounded by Indo-Nepal international boundary, which broadly cuts through the Bhabar and Terai zones of Bahraich, Siddharthnagar and Maharajganj. The Eastern Uttar Pradesh extends over an east to west length of 375 Kilometers and North to South 550 kilometers.

## **OBJECTIVES OF THE STUDY**

The Eastern Uttar Pradesh is taken as the study area because it is one of the most important agricultural areas of Uttar Pradesh and about two- third rural population is engaged in agricultural activities. Keeping in mind, a detailed study of Eastern Uttar Pradesh is under taken to see the socio-economic development in different field.

The basic objectives of the study are:

- (1) To assess the transformation of land use pattern.
- (2) To estimate the levels of production of food crops
- (3) To examine the agricultural transformation and the levels of development.
- (4) To find out the levels of development like industries, health, education, electricity supply, transportation, communication etc. in the study area.
- (5) To assess the rural transformation and their socio-economic developments.

## **APPLIED METHODOLOGY AND SOURCES OF DATA**

For a successful planning and analysis of various problems, data are essential. Regional development is a complex problem; therefore collection and sources of data should be reliable and up-to-date to achieve accurate result and conclusion for making decision and future planning. Without the

knowledge and clear understanding of the comparability of data over times as well as pitfalls and the gaps, one may lead to faulty results.

The present study is primarily based on secondary data covering the period of 1980-81 to 2000-2001 but for detail analysis of impact of agriculture transformation on rural development, primary data (field data) have also been used which are collected through a well-prepared survey scheduled. Secondary data have been collected from government and quasi-government agencies in whatever form-published or unpublished, it was available. District and state level gazetteers are consulted for historical background. The time frame work for the study stretches from 1980-81 to 2000-2001 primarily because of availability of latest data at that point of time for various indicators included in the study viz., rainfall, temperature, land use pattern, irrigation, area and production of food and non food crops. The sources of data utilized the sources of data utilized in the present studies are mentions below:

1. District gazetteers of different districts of Eastern Uttar Pradesh
2. Department districts head office record.
3. Districts census handbook.
4. States administration statistical bulletin
5. Agricultural statistical bulletin, Uttar Pradesh.
6. Economics and statistics division, state planning institutes. Uttar Pradesh.
7. Survey of India topo - sheets.
8. Census of India.

## FRAME OF THE STUDY

The thesis has been organized into seven chapters. Introductory chapter dealing with the conceptual frame work including the basic aims, objectives, data resources, overview of literature, design and methodology and survey schedules. The geographical profile of the study includes administrative profile, physical setting-geological structure, physiographic structure, climate, drainage and different types of soils of the study areas.

In the net sown area of Eastern Uttar Pradesh, there has shown a marked variation among the districts of the study area. The districts of Ghazipur, Jaunpur, Azamgarh, Ballia, Gorakhpur, Deoria, Basti, Faizabad have high proportion of area whereas the districts of Allahabad, Gonda, Bahraich, Pratapgarh have low proportion of area. The main factors of variations in the distribution of net cultivated of the region are soil and others are a continuous population pressure, an increasing demand of food grains. Area sown more than once in the study area has shown constant progress has been recorded over the given periods of time from 30.29% in 1980-81 to 33.43% in 2000-01. Gross cropped area has also shown constant increase in the eastern Uttar Pradesh i.e. 89.06 % in 1980-81 to 100.54 % in 2000-01.

From the above discussion various relations are observed between land use pattern and the level of agricultural development viz. very high to medium levels of agricultural development registered positive transformation of land use pattern low to very low levels of agricultural development highlighted negative transformation of land use pattern. Similarly, the relationship can further be drawn between land use pattern and population which reveals that the high density of population areas have marked positive transformation of land use pattern whereas medium

to low populated areas indicate negative transformation of land use pattern. Likewise the relationship between livestock and land use pattern has shown that the areas showing high density of livestock have recorded positive rate of change in land use pattern, while the areas showing low livestock density highlighted negative rate of change in land use pattern.

The agriculture economy of Eastern Uttar Pradesh remained unchanged for a long time. The basic instruments remained same, population pressure; uncertainty of rainfall made cultivation dependent on irrigation and crop pattern closely followed the soil and climatic pattern. Even then, agriculture has shown rapid transformation in its areal expansion and it has adjusted to the changes as a consequence of overall development. Hence, the agricultural transformation has been observed with respect to area, production and productivity in food and non-food crops in kharif and rabi seasons, especially in case of cereals crops, fruits, vegetables etc. But there is still a considerable scope for horizontal expansion of agriculture by bringing substantial proportion of wasteland, culturable wasteland and fallow land under crop cultivation with the help of modern technique.

Similar to land use, the cropping pattern in the Eastern Uttar Pradesh has undergone change. The agricultural transformation during kharif and Rabi seasons are marked by positive rate of change in the study area from 1980 to 2000 but tremendous changes have been made during 1980 to 1990 due to much more development of tube wells, irrigation facilities. Due to physio - climatic and techno- institutional variations, the transformation of area under agriculture is highly variable in different parts of the study area. The area and production under food crops have shown positive rate of change in the whole eastern Uttar Pradesh. Due to green revolution, considerable changes have been taken



place in cropping pattern and production in the study area as well as the whole state.

The analysis of area under total food grains is of great significance because it plays an important role in projecting the output from agricultural sector to meet the food requirement in the study area and the state. On the whole, the area and production under total food crops have witnessed positive transformation in the state. From the above discussion we arrive at some important point that the relationships between the food crop and non- food crop in kharif and Rabi season. Wherever, the area has increased the production has also increased, and whenever the area of non-food crops has increased the production has decline due to the declining trend of yield. Similarly, the relationship between area and population is stt^aight-forward in revealing that, in densely populated regions, the area under agriculture has highlighted positive trend of transformation and in sparsely populated region, the area under agriculture has depicted negative trend of transformation.

In the food crops, cereals play a dominant role in the economy in general and farmers in particular. The area and production of cereal at state and regional level pointed out positive transformation. The pattern as revealed by cereals is not the same when the individual crops are compared for further details. The area under rice crop cultivation has increased in the whole study area as well as the state due to the high yielding rate. The production of rice has also increased in the entire study area due to regular monsoon, using good quality of seeds, using good quality of fertilizers etc. The wheat crop is a important cereal crop grown in the study area. The area and production under wheat crop cultivation has increased in the whole study area as well as the state due to the high

yielding rate, regular monsoon, using good quality of seeds, using good quality of fertilizers demands of the products etc.

When the matter of pulses has come, there is found different type of situation and the situation is not very encouraging when spatio-temporal analysis is done for the cultivation of pulses in the study area. The area under pulses has shown decline in the state due to low yielding rate.

In Eastern Uttar Pradesh, it has been found that in recent years the demand for food grains is not increasing because of greater production. All the districts have per head per annum higher production than the standard requirement. But if we see the production pattern of cereals and pulses in Eastern Uttar Pradesh since 1980-81, we find a different pattern of production of cereal and pulses. It has been found that in 1980-81, there was deficit condition in per head share of cereals and pulses in most of the districts. Only two districts namely Deoria and Gorakhpur presented positive condition. But in 2000-01, per head share of cereals has increased more than hundred percent in all the districts and per head share of pulses decreased from 1980 to 2000. Thus at present, there is no shortage of cereals in the region and the region has sufficient production of cereals than the requirement for the total population. But the per head pulses production has decreased in most of the districts of Eastern Uttar Pradesh from 1980 to 2000. The main cause of decrease in pulses production is the decrease in area under pulses and it is due to low yielding rate. It has been found that a large area under pulses has been replaced by wheat and rice. Because the productivity of wheat and rice has increased many times by new agricultural technology. This is the major cause that is why the production of cereals has increased in eastern Uttar Pradesh while the production of pulses has decreased. Thus from

the study, two points emerge- one is that there is adequate cereal production in the region than the requirement and other is pulses production is less than the requirement. The pulse prices, at present are very remunerative to the farmers but it is the risk of crop failure due to pests and disease which discourage the farmers to cultivate the pulses in the large scale. Therefore, it is essential for the agricultural scientists to bring about a technological breakthrough as in the case of wheat and rice by developing more high yielding and pests and disease tolerant varieties of pulses. Keeping this view in mind, a number of improved varieties of pulses have been developed and they have checked the declining trend in areas where irrigation has been introduced. Now, the major task lies in motivating the farmers to adopt the pulse production also just like the wheat and rice. Similarly, there is a need to introduce short- duration varieties of pulses both under irrigated and un- irrigated conditions. This will help greatly in increasing the pulse production in Eastern Uttar Pradesh. As far as cereals production is concerned, there is adequate production in the study region. There is no any shortage of cereals in Eastern Uttar Pradesh at present. It has been possible mainly due to the high yield and higher growth rate of production by the new agricultural technology. But this adequate food grain production is not available to all the people at all times for an active, healthy and prosperous life. Poverty has been one of the major causes for this poor food security. More than seventy percent population lives in rural areas and is engaged in agricultural activity. This population, by and large, is characterized by dirt, disease, malnutrition, and ignorance illiteracy, lack of resources for improvement and development and very low rate of capital formation, considerable unemployment and more under employment and very low percentage of rural people to take advantage of science and technology

because they have neither resources nor the adequate knowledge. Acute and chronic under nutrition and most macro nutrients deficiencies primarily affect the poor and deprived people who do not have access to adequate food , live in unsanitary environment , without access to clean water and basic services and lack of access to appropriate education, capital, communication and information. In developing countries where approximately two- third of population lives in rural areas, increased production of food for family consumption or as a source of income helps to stabilize food price and improved marketing facilities can also contribute the food security. Thus there is a need to improve the socio-economic conditions in rural areas and it will ultimately offer and opportunity for better income and employment generation.

Sugarcane is one of the important commercial crops of the state as well as of the whole Nation and it has become the most important crop of some districts of the study area. This is due to well development of sugar mills in the study area. The area has reveals the positive change in this crop due to much more demands of the product and high yielding. The government also motivated the farmers towards this crop by providing many new incentives at the subsidy rate and due to this, the farmers attention is much more come forward towards the sugarcane for their prosperous life and due to this, the area is transformed from the area of other crops but only in those districts of the study area where well development of sugar mill has been made.

From the above discussion it can be inferred that wherever the area under cereals have increased, then at the same time the area under pulses has declined in the study area as well as in all the states. The positive and negative trend of area has been further revealed that with the increase in

area and production, the productivity based on calorie and money value for cereals and cash crop also increased in the study area.

After the green revolution, the region has made drastic changes in all socio-economic factors. The serious problems in India are the regional disparities and it causes social, economic and political instability. This problem is found everywhere in India. As far as the development of this study area is concerned, there is considerable spatial disparity in the level of development. Development in terms of industrialization, urbanization communication and other sectors are found only in few areas while the others are backward. In present study both techniques qualitative and quantitative have been used. These techniques are simple statistics and composite index and they are used for the assessment of socio- economic development and agricultural development in Eastern Uttar Pradesh. Such type of study provides a base for National planning and helps researchers, administrators, policy makers and planners to identify regions, at different levels of development. An analysis of the study area to identify the backward regions, to measure the levels of sectoral and overall development and extent of disparities in Eastern Uttar Pradesh, has been made on the basis of various socio- economic levels of development for the year 1980 to 2000. With the help of this analysis, it has been found that there is general development in socio- economic fields. But this development is not uniform in all the districts. The indicators, which are used for this purpose, are agriculture, industry, education, health, communication, transportation, powers etc. These indicators have not been developed in uniform pattern in all the districts. Some are highly developed and some are less developed. Similarly, some districts are developed and some are not developed.

Agriculture, industry, education, health, communication, transportation, power sectors etc. have made high and moderate development in most of the district of eastern Uttar Pradesh. The industries have made high and moderate development in Allahabad, Varanasi, Gorakhpur, Deoria, Mau, and Sonbhadra. While in the remaining districts the development of industries was low. Similarly, health sector also made high development in Allahabad, Varanasi and Gorakhpur and moderate development in Ballia, Basti, Faizabad, Pratapgarh and Sultanpur. In general, the districts of central and north-western parts have made less progress than the districts of other parts of the study area. There are different factors for the different types of development in different sectors. For example in the fields of agriculture less development in some districts is due to unfavorable topography, problems of floods and famines, lack of capital and lack of diffusion of agriculture etc. less development in industries is attributed to the fact that there is a good development in agriculture and more than 70% population is engaged in agricultural activities. The educational development is generally related to urban centers and hence high-level development is found in those districts, which have large number of settlements in terms of population and rural areas have low level of educational development. Transport and communication in general have made good progress in most of the districts. Only few districts such as Basti, Gonda, Mirzapur, Siddharthnagar, Deoria have made slow progress. The development of these sectors depends on the government policies and programs and ultimately government policies are not the same for all the districts. Level of regional development show many dimensions of progress and stagnant. There are found strong contrast in the level of development between different regions of the study area. A contagious region of high level of

development is observed in the southern part of the study area which is relatively prosperous and well developed while the other regions are moderately developed. The general pattern of the levels of development shows a decline in the economic and social well being in some districts like Bahraich, Basti , Gonda, Maharajganj and Siddharthnagar. The high level development is found in Allahabad, Varanasi, Sonbhadra, Mirzapur, Gorakhpur and Azamgarh. These districts attained the high level development in 2000-01. Similarly the districts of Pratapgarh, Ballia, Deoria, Faizabad, Sultanpur, Jaunpur and Ghazipur recorded the medium level development in 2000-01. Five districts namely Bahraich, Gonda, Basti, remained in low level category because of less development of agricultural, economic and social facilities and amenities.

The rural development in Eastern Uttar Pradesh is based on the development of certain locations of primary and secondary activities, so that these locations act as growth centre and they will provide multiplier mechanism in the transformation of rural areas in general and rural poor in particular. Hence, in agriculture various growth centres have been created for diffusion of innovation and balanced agriculture in the state. When transformation is compared in area under food grains, income and people below the poverty line. Firstly, the areas which are showing positive transformation under food grains, the share from agriculture has increased and side by side there has been decline in people and number of families below the poverty line.

In the present study, and intensive fieldwork was conducted on 500 respondents of 30 selected villages based on scheduled questionnaires. It revealed meaningful and interesting result pertaining to their personal and household characteristics, farming characteristics, level of innovativeness in farming, occupational transformation, the process of urbanization in

the villages and social transformation particularly their attitudes regarding marriages, family planning, and status of girl child, religiosity, and exposure to mass media, household condition and level of crime. Besides the above noted characteristics the researcher gathered additional information through observation. In this study around 60% of the respondent belonged to the upper middle and old age groups since they are the heads and the leaders of the family major decision makers. Majority of the respondent belonged either to the OBC's or scheduled caste, higher caste Hindus and Muslims also constituted some percent of respondent. Nearly 70% of these respondents were either illiterate or less educated and their average family size ranged between 5-9 members. Around 50% of total respondent belonged to the category of landless or marginal farmers with land holdings less than 2 acres. About 50% of the respondent reported that the cropping pattern has changed over the years while 30% believed it did not and around 20% gave no answer to this question. The cropping pattern and agricultural productivity depends on level of innovativeness of the farmer and their capacity to use modern technology. So the above stated factors would have definitely helped in decreasing the area under culturable wasteland category and hence reported decrease in the uncultivated land.

Majority of the respondent in this study area were found to be very less innovative. Very small size of land holdings and poor agricultural produce can be accounted for the above fact. A substantial percentage of respondent were moderately innovative giving a clear indication that those who can afford, do use good quantities and qualities of fertilizers and pesticides and hire tractors, harvesters etc., only 20% of the total respondent were reported to be highly and very highly innovative. On the whole, the trend is towards being more innovative. Village wise analysis



reveals that villages on the immediate doorstep of Eastern Uttar Pradesh. For a complete analysis of socio-economic transformation, an assessment of the social attributes of the residents, of village was essential. Among various social parameters, educational levels, attitude towards marriage, attitude towards family planning, religiosity and social mobility were considered. Since status of women in a society is a good indicator of the level of social progress, straight-forward questions regarding the status of the girl child were included in the study. With the change in socio-economic life style, the number and nature of criminal activities also change. Hence an effort was made to understand all these forces underlying the socio-economic pattern of these villages.

Housing condition can be a good indicator of the socio-economic conditions of people. Based on several questions of diverse nature and using a scoring scheme, the respondents were grouped into three categories of poor, moderate and good housing condition. An urban influence in the life-style was clearly observed and felt by the researcher. Most of the houses were single story kutcha-pucca houses. Two thirds of the total respondents reported poor housing conditions; 18 percent a moderate condition and 16 percent a good housing condition. A great desire to emulate the city dwellers in general life-style among the villagers was felt by the researcher. Various means of the mass media play an effective role in diffusing information and affect the knowledge, attitude, opinion and behavior, which in turn affect the level of adoption of innovations and technology, leading to positive economic change. Majority of the respondents were found to be moderately exposed to them. Television sets were present in most of the houses. News papers were generally read public places and radio sets and cinema also formed very popular means of mass communication. Of course, the level of

literacy and purchasing power of the respondents did affect their level of exposure to mass media.

The field survey proved the general assumption that the degree of religiosity goes on decreasing among the people with increasing urban influence. The responses to various questions pertaining to religious practices of the respondents reinforced the fact that higher urbanizes the way of life leads to reduction in the strict following of religious rules. Based on scoring scheme by which all responses were brought to a uniform level, 37 percent of the total respondents belonged to the category of being least religious. Around 75 percent respondent said that they follow religious rules in day to day life partially, only 18 percent follow the rules fully and 7 percent respondents said they do not the rules at all. Interestingly a very distinct urban influence in matter of religiosity is getting represented in great pompous activities of jhanki during durga pooja although the level of religiosity is on decline in day-to-day life.

Marriage is other important social parameters, which is strongly interwoven in the social fabric. It acts as one of the best parameters to analyze the social transformations. Various related aspects of marriage, such as age at marriage, nature of marriage, location and place of marriage, process of marriage, dowry system etc. have undergone a change. By and large, preference of child marriage, closure distance with the caste open dowry demand and general decoration, food served etc. are undergoing drastic changes with a little difference among various castes. The index of change in attitude of people towards marriage reveals that around two thirds respondents have higher degree of change in all aspects mentioned above. The marriages in general have become very costly affair in matters of decoration, food served and photographers, vedio film and so on. One good trend that was noticed among the villagers was the

growing the practice of "Samoochik vivah" which is definitely a very bright ray of hope.

Closely related to attitude towards marriage is the attitude towards family planning. The level of awareness was extremely high that is 89 percent of the respondents were aware of these practices but only 83 percent choose to adopt it. Indian society being male dominated the respondents considered it to be women's responsibility to adopt these measures. Most of the respondents i.e. 94 percent agreed that small family is a happy family and one should go in for adopting these measures. But the difference was in the concept of small family; they believe family planning measures should be adopted after 3-4 children.

Status of the girl child is one of the indicators of social transformation. In this study area very positive change in this regard was observed. The survey revealed that 97 percent of respondents were in favour of sending their daughters to school and there was no deliberate discrimination against them. Only if the economic condition did not permit, the girls were either not send to school or were sent to government schools, while the boys were sent to English medium private/public schools. People did express a desire for their daughter to take up some profession like teachers, doctors, lawyers and so on. This was a definite positive change. Sufficient awakening as regard to their concern for the girls to become mother was reflected in their answers. Around two-third respondent believed that a girl should become a mother only after the crossing the age of 20 years.

When societies transform, they becomes heterogeneous in nature, the existing social controls get minimized, comparisons become stark and there exists revolution of aspirations among the people. These all factors at times may result in greater criminal's activities or behaviors. Crime

way not always be a physical action, it could be an attitude, a feeling or an emotion. Survey revealed that although criminal activities have not increased drastically but a general feeling of insecurity and uncertainty was prevailing among people. Intoxication of several pan masalas, biri, and tobacco even in remotest villages in the age groups of 10 to 40 yrs was clearly reported. Possession of arms particularly rifles and pistols are a growing status symbol among villagers.

Occupational structure is one of the major indicators of level of development and transformation. Agriculture and allied activities are of course the main occupation but the latest trend among the people is of occupational diversification. The older generation takes up agriculture; the middle generation takes up occupation like poultry or fishing or dairy development etc. and the younger generation aim for either some small business or service in the neighboring city. Labour is emerging as one of the major economic activity. People take up different kind of works anywhere within their commutable distance and complete it within stipulated time period. It is more lucrative to them and tension free for the employer. Dairy farming and poultry farming are popular occupation being practiced on commercial and subsistence basis. The younger generation not only prefers service but also tries hard to get it.

The overall picture that emerges out of the investigation proclaims that the prevailing agricultural system in Eastern Uttar Pradesh has to be made more meaningful for accelerating the pace of socio-economic development of the masses in general and the farmers in particular. The stagnation of traditional agriculture, poor socio-economic level of the people in the villages has long been preoccupying the minds of the policy makers and the political leadership. Now they can hardly afford to ignore

the conclusions drawn by the scholars of diverse disciplines while the present investigation approaches the problem from different angle viz., land use planning, improving the existing farming systems, crop planning, tree cropping and public participation.



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## ***CERTIFICATE***

Certified that the dissertation entitled "*CHANGING LAND USE PATTERN AND RURAL TRANSFORMATION IN EASTERN UTTAR PRADESH*" submitted by Mohammad Shah Alam Khan in partial fulfillment for the degree of **Doctor of Philosophy** in Geography from Aligarh Muslim University, Aligarh represent his original work. This work has been carried out by him in the department under my guidance and supervision. The work of the scholar has been duly acknowledged, wherever they have been referred.

**Prof. Ah Mohamnias**  
**Supervisor**



THESIS

*Dedicated  
To*

*My  
parents,  
^Ej(jSupervisor  
(ate (Dr.?A.ohd,Siddique  
my supervisor,  
brothers, sisters  
&  
friends.*

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## Acknowledgements

It needs to be recorded that the fruitful completion of this research was made possible by the helpful guidance and encouraging given by my teachers, family members and friends. At the very outset I must express deep sense of gratitude to my supervisor, Prof Ali Mohammad (ex-chairman) for the guidance provided to me in the preparation of this thesis. Despite his busy schedule has been extremely kind to lead me his valuable and precious time and patiently discussed minute details. Words prove insufficient in describing his efforts to contribute to my research work. I am also indebted to the other members of the faculty, who, in their own respective ways, have helped in my research work.

In fact, I am very grateful to Prof Abdul Munir, (chairman) encouraged me to complete the work as soon as possible in a well manner.

I am very grateful to every single person who has supported and assisted me. There are several people who have been especially helpful whom I wish to acknowledge.

I am also very grateful to Prof. Iqbal Mohiuddin (NCERT), Dr.Reyaz Asad khan and Dr.Rais Ahmad for his helpful guidance and alots of encouragement.

Undoubtedly, it is the love, blessing and constant inspiration of my parents which have been the sole strength for me during the period of my present research assignment and provided me with unlimited amount of encouragement. Very special thanks to my sisters and brothers who contributed unconditional love, support and encouragement through out this entire project.

Very special thanks to Mr. Afzal Ahmed, Javed Qadir, Ashiqu-e-Rasool, Shamim Alam who has been very supportive throughout this project.

Dr. Mukammil, Dr. Jamshed Khan. Dr. Masiullah Khan, Dr. Minhajul Hoda and Dr. Nuruz Zaman were the other person who besides the above, kept pushing me hard to finish this work and on and off pulled me out of my moments of lull. I would like to thank these persons for this and also wish, that this concern of theirs for me, remains for my life time.

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A handwritten signature in black ink, appearing to read 'Mohammad Shah Alam Khan', with a long horizontal stroke extending to the right.

*Mohammad Shah Alam Khan*

## AXIOM

It is fact that the words are insufficient to bear the debt of gratitude to my ex-supervisor late Dr.Mohammad Siddique, reader, department of geography, A.M.U. Aligarh under whose supervision I completed most of the work and prepared broad outlines of my Ph.D. work. He was a man of good nature. He was really an ideal teacher. To my woes, I could not get his able guidance for the full terms, owing to his death. His encouragement and simplicity always deeply inspired me during my association with him. It is better to thank him in language of silence, for it is easier to be eloquent in that language. Finally I pray that almighty god blessed him and have a place in the heaven.



(MOHAMMAD SHAH ALAM KHAN)

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## **PREFACE**

Agriculture being the largest industry and main occupation of the people of Eastern Uttar Pradesh has an important place in the economy of the state. The struggles in land and production have effects, which ripple over all other sectors. Social and economic policies in agriculture set the tone and momentum of the whole national economy, therefore, there is considerable debate about land use that what type of agricultural production is beneficial or suitable for the development of national economy and social well being. The farmers engaged in traditional agriculture are poor, hence, they do not have enough to spend in agriculture and improve their socio-economic condition. How to transform the traditional agriculture which is niggardly is the main problem of this study.

The study is an attempt to find out changing pattern of land use and its related impacts on rural development. This approach treats agriculture as a source of economic growth and the analytical task is to determine how cheaply and how much growth can be realized from transforming traditional agriculture by means of investment into a more productive sector. Adequate emphasis has been given to examine the trend of change in area, production, cropping pattern of food and non-food crops and relevant government policies. A review of literature on land use transformation and its impact on rural development indicates that both the components have been discussed in details separately by the scholars of various disciplines. The study is based on both primary and secondary data. Quite a large number of statistical techniques have been applied to reach our required results. The study is organized into seven chapters according to their parameters evolved after the

results. It opens up with an introductory chapter dealing with conceptual framework including the understanding of land use. The problem is stated and the basic aims, objectives, data resources, overview<sup>^</sup> of literature, design and methodology and survey schedules. The geographical profile of the study is given in chapter two. It includes administrative profiles, physical setting - geological structure, physiographic structure, climate, drainage and soil of the study area. Chapter three deals with the titled land utilization mainly highlighting parameters of transformation and their results on land on type of crops grown in different part of the year. The transformation is not only in the area but also in production as it is equally important to the changing trend. It also includes cropping intensity. Chapter four examines the levels of development in Eastern Uttar Pradesh viz. level of agricultural development in terms of conditions, production and infrastructure. Similarly economic infrastructure, socio institutional development, natural resources potential. It includes educational conditions, medical health services etc.

Chapter five, it includes parameters of rural transformation and development in terms of growth centers as well as with strategy evolved by the government from time to time to develop rural areas. Chapter six is an analysis of such changes in socio economic lives of the people as reflected in the field survey which includes personal and household characteristics, farming attributes, social attributes and occupational transformation of respondents. Chapter seven is an attempt to conclude the study and few suggestions regarding future planning of this study area.

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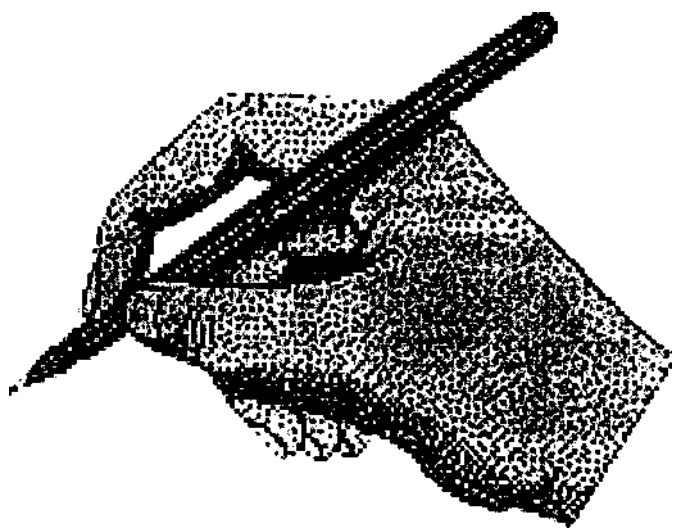
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# Introduction

# **CHAPTER -I**

## **INTRODUCTION**

### **I.1 CONCEPTUAL FRAMEWORK**

Land use is perhaps the most basic concept of agricultural economy. It is a key to the understanding of geographic adjustment of the agricultural resources. Moreover, regional land use patterns are the geographical expression of a large number of societal decisions made at different times for very different reasons which are responsible for an expansion of one category of land use at cost of other.

Land use patterns, although, are directly related to the physical controls, yet, there are several human and economic elements, which are responsible for land use and its distribution. It is the set of varying social values and certain institutional controls, which create different patterns of land use within the limitations imposed by different agro-physical controls. The impact of physical factors is subtle and interwoven with spatio-economic forces. The population increase leads to a major shift in the pattern of land use.

Land use in any region of the world varies due to the variations in the distribution of sunshine, rainfall, topography of the land, drainage conditions, and soil characteristics of the region. The spatial differentiation in these elements affects the purpose of land use for agriculture.

The main function of planning is to frame a guide for land use in such a way that all the available land resources are put to the most



beneficial use together with their conservation for future generation. The meaning of land use sometimes restricts to various uses of land, but in its use, we find overuse, underuse and misuse, which assist us to make a planning in order to attain maximum utilization of land.

World agriculture has undergone many changes in the last thirty years than in any commensurate period in history and consequently, perhaps rural transformation has occurred on an unprecedented scale. However, while relevant events such as food and oil crisis emphasize interdependencies within a Global System, most of the agricultural change is taking place independently within the distinct subsystems of developed and developing countries. This is a result of different level of physical base and the backlog of social and economy experienced political ideology and considerable sentiments of the agricultural success.

Unfortunately, agriculture is held in a very low esteem in most developing countries. Consequently many villagers leave farming and seek other occupations. Even the modernization of farming which is generally more advantageous, did not appear to make it attractive enough for them to prefer their children to stay in it. In order to transform traditional agricultural dominated by socio-cultural constraints into a modern agriculture based essentially on economical decision, a weakening and possibly even the elimination of traditional constraints is necessary. The transition from subsistence farming to commercial farming requires massive investments in the development of an appropriate and efficient infrastructure capable of providing the facilities needed to produce and distribute the inputs required for modernization as well as to handle the increased production. Traditional way of life and agriculture will have dramatic impact on principles of agrarian ideology, fueling a vast population migration of displaced farm workers etc.. w\\^n brought under the influence of agents of transformation. In general, the

impact of agricultural change is proportional to the degree of dependence of a community or a country on farming as an occupational activity (Bowels, 1981).

Agriculture is the main component of economic sector of low income countries. In these countries most of the farmers are still in the subsistence class notwithstanding the tremendous advances in agricultural technology that have been made elsewhere in the course of the present century. The subsistence farms produce rice enough for the basic requirements of the family and hence, there is a requirement of new inputs of increasing production. Subsistence agriculture is also traditional in the methods of production use as well as the commodities produced. The stock of capitals and the preparation of income invested are low in traditional agriculture.

Agricultural change involves two interrelated processes. The first procedure is that the agriculture may be accelerated in a way to contribute more rapidly to the goals desired by the society. The second way in which agriculture continuously adjust to change as a consequence of overall development. When economic development begins, agriculture commands a high share of land, labour and capital resources and produces a high proportion of the National income. Therefore, the agricultural development must give attention-both to the ways of increasing agricultural production within its traditional structural and to the means and consequences of its modernization.

The two prime inputs of traditional agriculture are land and labour. The level of agricultural production in traditional agriculture is therefore, limited by the amount and quality of land and by the amount of the labour provided by the farmers, directly for production or indirectly through the formation of capital goods. Labour is, thus, of central importance in traditional agriculture. In modern agriculture, production is mainly

effected by allocation of working capital such as fertilizer, pesticides and, mechanical power inputs that are less in traditional agriculture. Modernization is thus, more than a process of increasing the productivity of the traditional resources already employed.

But still, the concept of agriculture in Eastern Uttar Pradesh as compared to neighbouring states and more closely in different parts of the states due to purposive transfer in technology, money and infrastructure. In some parts, agriculture has remained unchanged for a long historical epoch. The basic instrument of production remained the light wooden plough, some time iron-tipped and some times not. Uncertainty of rain fall made cultivation depend on irrigation-whenever possible by lift irrigation, tube-wells etc. Crop combination closely followed the soil and climatic pattern prevailing in each particular region.

However, there is need to transform traditional agriculture into a developed, higher per-capita income cropping pattern. Even the obstacles to the vigorous expansion of the plantation economy are to be removed. In the plantation economy at the initial stage a large part of the population is in a very low income brackets. Consequently, most of the group's effective demand consists of a few basic foods, simple clothing and other durables and minimum shelter needs. In this sense, agricultural transformation is comprehensive and multidimensional concept and encompasses the development of agriculture and allied activities - village and cottage industries and crafts, socio-economic infrastructure, community services in rural areas. The main objective of rural development is to increase the availability and widen the basic life sustaining article such as foods, cloths, shelter and security. To raise the standard of living including higher purchasing power the provision for more jobs, better education and greater attention to cultural and humanistic values, there is need to expand the range of economic and

social choice of individuals by freeing them from servitude and dependence.

Transformation of rural landscape and traditional farming into modern scientific ways has been the important part of agricultural development programs during the five years plans. Since the primary objective of farming has been to ensure food supply and agricultural raw materials, it is pertinent to examine critically the spatial pattern of modernization and its impact on agricultural productivity and position of food availability and actual food intake in perspective of physio-cultural environment.

## **1.2 STATEMENT OF THE PROBLEM**

With the passage of time, the agricultural transformation has taken place and it has established distinctive type of crop and plantation production system. The new system of production has produced important geographical consequences-economic, social and political etc., transformation is dependent on the agriculture and it requires investment. Thus, it is an investment problem. It is not primarily a problem of supply of capital, rather a problem of determining the agricultural farms, where the investment has been made. Therefore, investment must take agriculture farms into consideration, so that it becomes profitable. This approach treats as a source of economic growth. Now the analytical task is to determine how cheaply and how much growth can be realized from transforming traditional agriculture by means of investment in a more productive sector (Schultz, 1964). Traditional agriculture is categorized by extremely limited capital resources, consistency in the use of traditional method of production, commodities produced and low productivity of land and labour. These characteristics tend to perpetuate

the existing situation whereby agriculture produced rice and wheat enough for survival and cannot, therefore, make a substantial contribution to economic growth.

When economic development begins agriculture commands a high proportion of country's land, labour and capital resources and produces a high proportion of the national income. So it is not easy to quantify the relationship between the rural development and agricultural transformation. There are several points, which take place during the process of agricultural transformation viz. shift of labour from agriculture to non-agriculture sectors, creation of non- farm jobs and establishment of new market centre etc.

Therefore, it is essential to study the relationship between agricultural transformation and rural development for a rational and meaningful alternative of agricultural planning for the overall development of a region. And for this purpose the state of Eastern Uttar Pradesh has been taken for the present study.

### **1.3 STUDY AREA**

Eastern Uttar Pradesh is an important part of Uttar Pradesh. It lies between 23° 45' north to 28° 20' North latitudes and 81° 5' east to 84° 36' East longitudes. Eastern Uttar Pradesh is bounded by Nepal in the north by Central region and bundelkhand region in the west, Madhya Pradesh and Chhattisgarh in the south and Bihar and Jharkhand in the east. The northern limit of this region is bounded by Indo-Nepal international boundary, which broadly cuts through the Bhabar and Terai zones of Bahraich, Siddharthnagar and Maharajganj. The Eastern Uttar Pradesh extends over an east to west length of 375 Kilometers and North to South 550 kilometers.

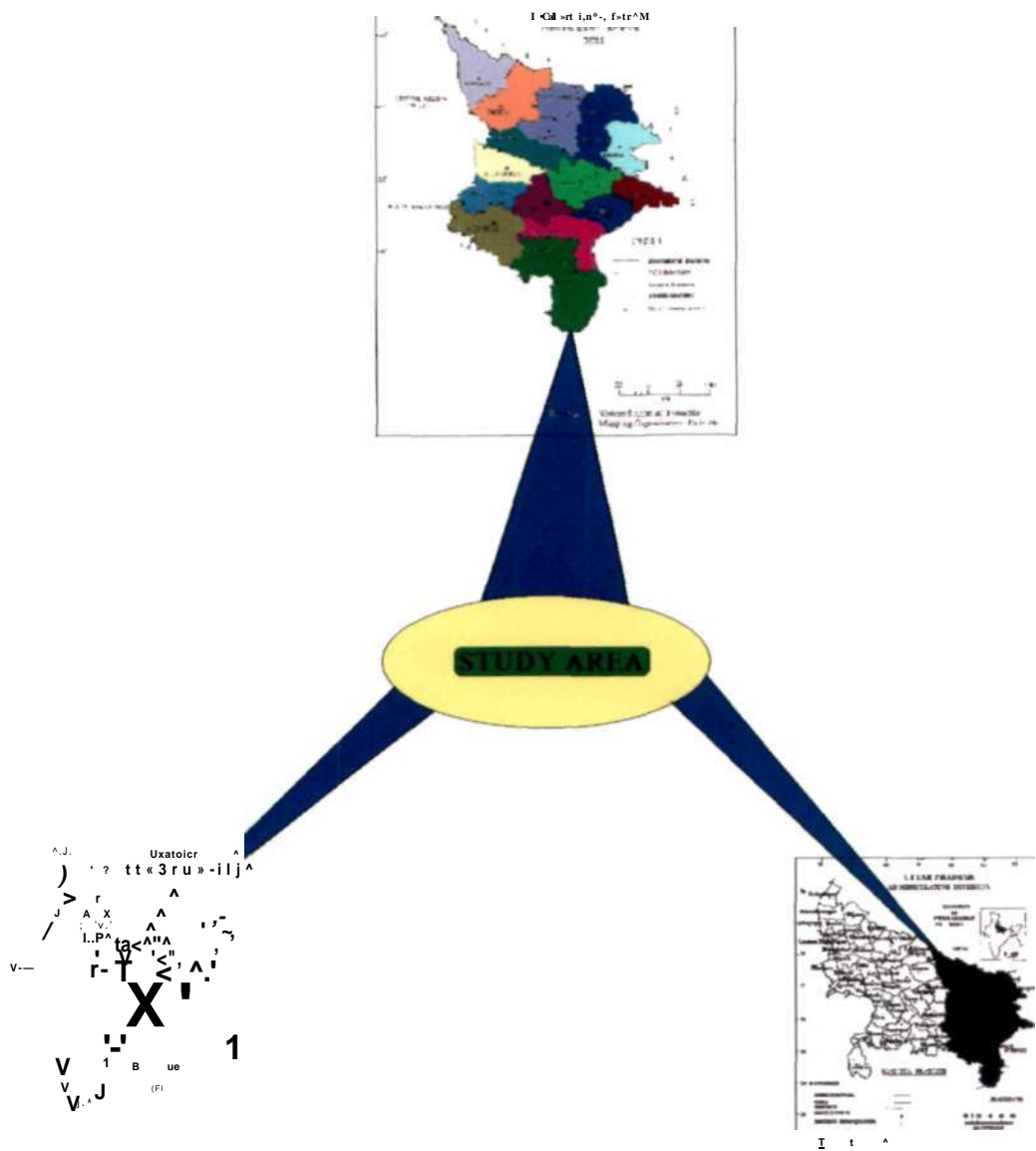


Fig. 1.1

Eastern Uttar Pradesh is situated in the centre of Indo- Gangetic plain but when it is trying to analyse the situation of production of different crops in Eastern Uttar Pradesh in comparison of other districts of Indo- Gangetic plain then it has found that the production of crops in eastern Uttar Pradesh is not good except wheat and rice. The west portion of Indo-Gangetic plain (Haryana and Punjab) produces much more times as compared to Eastern Uttar Pradesh. Most of the districts of Eastern Uttar Pradesh come under the category of low and very low level of agricultural development, only few districts are found in the medium level and high level of agricultural development. Nearly all the districts of Haryana and Punjab occupy high and very high level of agricultural production among all the districts of Indo-Gangetic plain.

According to census 2001, agriculturally, the net sown area is about 5,428,405 hectares, which is about 63% of the total area of Eastern Uttar Pradesh. The Gross cropped area is about 8,229,196 hectares. The net irrigated area is about 41% only while  $\frac{2}{3}$ \* of the total population are engaged in agricultural activity and about  $\frac{3}{4}$ \* of total population lives in rural areas of this region.

## 14 OVERVIEW OF LITERATURE

Enormous literature exists on land use, agricultural transformation as well as on rural development and their related parameters. The literature available in economics, sociology, geography and other social and physical sciences have been thoroughly reviewed and analyzed. Transformation of traditional agriculture, its nature and structure, have been elaborately studied by social scientists in variety of ways at national and regional levels (Grigg, 1982; Sagar and Ahuja, 1987; Molner, 1980; Johnston, 1975; Singh (ed.), 1922 and Shultz, 1964).

L. D. Stamp (1951, 1962) pioneered the land use studies in Britain. Land use map of Cyprus was prepared by K. P. Sealy (1956) in London school of economics. In Poland under the guidance of J. Kostrowicki (1968) developed a new pattern of land use based on new agricultural typology, agricultural regionalization and planning. Land use studies conducted by Indian geographers in various parts of the country received inspiration from L. D. Stamp.

Aligarh Muslim University is still holding a pioneer position in land use studies and related aspects. The contribution in this field is most loudable. Shafi M.(1960) contribution has played a leading role followed by A. Mohammad(1975) contributed by writing many books such as Studies In Agricultural Geography(1978). land use, food and nutrition(1978), N. Mohammad(1981), Agricultural Land Use in trans Rapti plane(1981). Majid Hussain, Agricultural Geography(1982), M. Farooq Siddiqui, Land Use In Bundelkhad region(1981), Amani(1989), Land Utilization in Golgarhi village.

Likewise, modernization of agriculture has also been a major theme of study for social scientists (Arnon, 1981; loewenson, 1992; Tewari and Jain, 1989; Enyedi and Volgyer, 1982 and Kelly, 1985), 1990; levi, 1996;



Ramaswamy et. Al., 1972; Huang, 1973; Grigg, 1976; Datto, 1976; Das, 1979 and Boserup, 1981).

Some of the economists feel the agricultural restructuring is of primary concern for control over production process and production activities with the farm (Fitzsimmons's, 1986). Agricultural development is, in fact, a major part of rural development in particular and economy in general (Dantwala, et. al., 1986).

The ancient, medieval and modern literature on economics have always highlighted the role of agriculture in economic development (Mellor, 1996; Raja Mani, 1970; Wamock, 1987; Kool, 1960; Halcrow, 1980; Eicher and Witt, 1904; Raw, 1969; Smith worth et.al., 1967; Eicher, et.al., 1964 and Edjer, 1971). The work of Malthus, Ricardo and Von Thunen provide good example and their models can be fairly easily adopted to the study of agricultural change. Some models of modern human geography may be helpful in understanding agricultural past and the diffusion of agricultural innovation. Measurement of growth of productivity changed can be an instance of methodological approaches to the study of modern agricultural change.

Molan (1986) highlights that the rise and fall of new commodities, production technologies and shifting government policies have dynamic effect on the lives of generation of farm families in the rural areas. He examines the impact of such changes on individuals and families and the inter relationship between agricultural change and community change.

There are plenty of documents and literature in rural development viz., Sagar and Ahuja, 1987; Chatto Upaddhya, (1985); Shaw,(1977); Johnston,(1982); Mascarenties,(1988); Thawa and Prakash,(1989); Pandey,(1989); and Karatr,(1986); etc. but there is the depth of studies and literature to find out permanent solution based on plantation agriculture.

New development thinking emphasis on growth with redistribution and satisfying certain basic needs- nutrition, health, water supply, shelter, sanitation and education which have come under the broad line of sustainable development mainly focusing sustainable, rural development, environment etc. (Radcliff, 1987; Dasmann, 1985; Clements, 1961; Conway, 1985 and Lopez, 1982).

The interest of geography in the subject of development is especially to understand the reasons for differences in the level of development between places and in changes occur on the earth's surface as development proceeds. The starting point of geographical studies of development is, therefore, the distribution of the different levels of development across the surface of the earth-between countries, between regions, within countries and within regions (Courtenay, 1965 and 1985; Sharma and Continho, 1989).

Although agriculture did not play a strategic role in the industrial development, it is difficult to generalize about the extent to which people were pushed out of agriculture. Many economist and geographers have explained factors responsible for such movements from agriculture (Swaroop, et.al., 1987; Raju, et.al., 1987 and Nanada, 1987). Bapana (1973) has examined the impact of green revolution on the socio-economic is set up of Kota district of Rajasthan. He has made an attempt to find out the nature of traditional agriculture and the direction in which it is getting transformed. Narayanan, 1973, examined the type of change, which has taken place in rural socio-economic institution, social structure, technique of production and employment in Hissar and Kamal District of Haryana as a result of introduction of hybrid seed.

In 1994 United Nations Research institute for Social Development (UNRISD) summarized the findings and recommendation of global research inquiry into socio-economic implication of Green Revolution.

Project testified that the new technology has increased the profitability in agriculture and caused a decline in the use of family labour, exchange labour and machine labour. New agriculture sets into motion, deep current and changes in the relation among land, labour and capital; among owner, tenants and labourers; and among agriculture, commerce and industries.

Agricultural scientists have, by and large, studied the climatic problems, cause and effect of various diseases, irrigation and storage problems (Richard, 1887; Shaw, 1911; Coldwell, 1920; Harvey, 1923 and Fischer, 1918). Geographers did study the agricultural development, rural development, dynamics of change, etc., but they were busy in analyzing the spatial distribution of agriculture with respect to physio-economic conditions viz. Singh, (1970); Mohammad, (1978); Grigg, (1982); Thaha and Prakash, (1989); and Courtenay (ed.), (1985).

Brief review of the literature indicates that there is absolute scarcity of studies association between agricultural transformation and rural development and that too on the changing nature of association. In a sense, this work is a systematic historical geography of agriculture. Therefore, author has selected this topic for a detail analysis with specific aims and objective.

## **1.5 OBJECTIVES OF THE STUDY**

The Eastern Uttar Pradesh is taken as the study area because it is one of the most important agricultural areas of Uttar Pradesh and about two- third rural population is engaged in agricultural activities. Keeping in mind, a detailed study of Eastern Uttar Pradesh is under taken to see the socio-economic development in different field.

The basic objectives of the study are:

- (1) To assess the transformation of land use pattern.

- (2) To estimate the levels of production of food crops
- (3) To examine the agricultural transformation and the levels of development.
- (4) To find out the levels of development like industries, health, education, electricity supply, transportation, communication etc. in the study area.
- (5) To assess the rural transformation and their socio-economic developments.

## **1.6 RESEARCH DESIGN AND METHODOLOGY**

For a successful planning and analysis of various problems, data are essential. Regional development is a complex problem; therefore collection and sources of data should be reliable and up-to-date to achieve accurate result and conclusion for making decision and future planning. Without the knowledge and clear understanding of the comparability of data over times as well as pitfalls and the gaps, one may lead to faulty results.

The present study is primarily based on secondary data covering the period of 1980-81 to 2000-2001 but for detail analysis of impact of agriculture transformation on rural development, primary data (field data) have also been used which are collected through a well-prepared survey scheduled. Secondary data have been collected from government and quasi- government agencies in whatever form-published or unpublished, it was available. District and state level gazetteers are consulted for historical background. The time frame work for the study stretches from 1980-81 to 2000-2001 primarily because of availability of latest data at that point of time for various indicators included in the study viz., rainfall, temperature, land use pattern, irrigation, area and production of

food and non food crops. The sources of data utilized the sources of data utilized in the present studies are mentions below:

1. District gazetteers of different districts of Eastern Uttar Pradesh
2. Department districts head office record.
3. Districts census handbook.
4. States administration statistical bulletin
5. Agricultural statistical bulletin, Uttar Pradesh.
6. Economics and statistics division, state planning institutes. Uttar Pradesh.
7. Survey of India topo- sheets.
8. Census of India.

The state covers a very large with var\ing physical, social and economic condition, which has direct and indirect bearing on agriculture transformation and rural development. Hence, it is not possible to conduct survey of the entire study area. Therefore, stratified purposive sampling technique has been used to collect the primary data to study the land use pattern, level of income and its impact on family size, educational level, housing standards, level of mobility and innovativeness, exposure to mass media, farm production and expenditure. Keeping the above criteria in view, survey of the district Ghazipur was done; contacts were developed from top-level district official, state official down to the village level workers.

From each selected village, 15-20 samples of households were selected. In the selection of households utmost care has been taken regarding the representation of major occupation types, size of holdings, educational status and social position etc. these respondents were selected in order to assess the differences in the socio- economic transformation. From each household, either the senior member of the household or the

one who takes major decision regarding day-to-day affairs of family was selected. The village sarpanch or schoolteachers were also contacted to familiarize with the local situation and to facilitate the interview of farmers in study villages. The total number of respondents selected was 500 in 30 villages.

Table 1.1

Selected villages

S. no.	Name of the village	Selected households
1-	Sanehuan	20
2-	Katoli	20
3-	Mania	16
4-	Gorasra	15
5-	Kabirpur	20
6-	Salempur	18
7-	Bahuara	16
8-	Dildamagar	17
9-	Binpurva	15
10-	Kusumpur	16
11-	Karma	15
12-	Pachhokhar	16
13-	Dewaithha	15
14-	Dewal	15
15-	Amaura	17
16-	Tajpur kurrah	16
17-	Zabuma	16
18-	Mircha	15
19-	Mednipur	18
20-	Suhawal	17

21-	Ramawal	15
22-	Mahend	18
23-	Gopinalkpur	19
24-	Jalalpur	18
25-	Lolaha	15
26-	Fatehpur Atwah	16
27-	Susundi	15
28-	Nunehra	18
29-	Nizampur	15
30-	Bahadurpur	16
	Total	500

Selected respondents were interviewed in detail according to the well-prepared survey sheduled.

## **1.7 SURVEY SCHEDULED**

Schedule No.1: This schedule besides containing miscellaneous information regarding villages, its name, its location, date of interview etc. is for recording personal characteristics of the respondents such as age, education and social status.

Schedule No.2: This schedule is for recording house hold characteristics such as age and educational qualification.

Schedule No. 3: This scheduled reflects the nature of housing conditions of the respondents such as year and cost of construction, number of rooms, yearly cost of repair.

Schedule No. 4: It includes question on farming characteristics such as land utilization, farm production, consumption pattern in family and monthly expenditure on various commodities.

Schedule No. 5: It highlights question on exposure to mass media level; of mobility, level of innovativeness.

Schedule No. 6: This includes question regarding social transformation particularly information about attitude toward marriage, family planning status of girl child, religiosity, exposure to mass media, household condition. Not only this, but researcher also gathered additional information through his own observation and peoples participation. This was related to the socio-economic condition and the farming attributes.

The interview scheduled was organized in such a way that the information may be obtained not necessarily at one time, but over a period of time. In many cases, respondents could not spare more than thirty minutes to one hour at one point of time; hence they had to visit one or more occasions. After completing the field survey of majority of selected villages, the processing of data was taken up. First of all, a thorough checking of entries of interview scheduled was done and wherever omission, duplication, confusion or any problem was found, and it was possible to rectify it by any of the above mentioned method, the village was resurveyed wholly or partially depending upon the gravity of the problem. After having been satisfied with the entries of the interviews scheduled by making alteration, modification and remaining discrepancies, the processing of data was done in the following ways:

- (i) Simple statistical techniques such as working out simple percentage, frequencies that were possible to apply and work out manually,
- (ii) Computer Technique, for working out some of the simple percentages and frequencies etc.



- (iii) In several cases scoring scheme has been used in order to bring the variables at uniform scale.
- (iv) Tabulation was done to squeeze a large set of data for comparative and comprehensive study. Data was arranged in ascending/descending order for the convenience of forming different categories of various personal, household and farming characteristic.

First of all, personal traits of the respondents have been examined. For examining the age composition, all the five hundred respondents were arranged according to their age in ascending order and divided into four categories of young, lower middle, upper middle and old age. Another important aspect of all the personal characteristic of the respondents in their cast structure. Respondents of all major caste, in their respective villages, have been interviewed including- Thakur, Brahmins, Muslims, Yadav, and so on. One more significant factors of agricultural development is educational status of the respondents.

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## **CHAPTER -II**

### **GEOGRAPHICAL PROFILE OF THE STUDY AREA**

Agricultural activities are primarily influence by the combination of natural environmental conditions and subsequently modified by the combination of human circumstances .the crops producing potentiality of an area depends primarily on the prevailing climatic and soil conditions. Of all the climatic parameters, rainfall and temperature are the most conspicuous as the extreme conditions arrest plant growth. But the main functions of the soils in agricultural terms, is to give mechanical support to plants and store and supply the required nutrients and water for plant growth. The soils therefore must be fertile and have considerable potential for crop growth. At the same time, the well balanced combination of technical, social, economic, religious and political elements are important to create a dynamic and progressive environment conducive to overall agricultural development. Of the non -physical factors, irrigation is the most vital in those vast agricultural areas which are potentially rich but suffer from the vagaries of seasonal rainfall, its meagemess or otherwise and its erratic characteristic. The present study is an attempt to describe the geographical profile of the Eastern Uttar Pradesh.

#### **n-1 THE ADMINISTRATIVE PROFILE**

Eastern Uttar Pradesh spreads from 23° 45' North to 28° 20' North latitudes and 81° 5' East to 84° 36' East longitudes. Eastern Uttar Pradesh



is bounded by Nepal in the north by Central region and bundelkhand region in the west, Madhya Pradesh and Chhattisgarh in the south and Bihar and Jharkhand in the east. The northern limit of this region is bounded by indo-Nepal international boundary which broadly cuts through the Bhabar and Terai zones of Bahraich, Siddharthnagar and Maharajganj.

The Eastern Uttar Pradesh extends over east to west length of 375 kilometers and north to south 550 kilometers. According to census 2001, the region of Eastern Uttar Pradesh has a population of 52.93 million spreads over an area of about 85.84 thousands square kilometers. The density of population of this region is very high i.e. 845 persons per square kilometers. This region is comprising of 27 districts now namely Bahraich, Gonda, Siddharthnagar, Basti, Maharajganj, Gorakhpur Deoria, Faizabad, Sultanpur, Azamgarh, Mau, Ballia, Pratapgarh, Jaunpur, Ghazipur, Allahabad, Varansi, Mirzapur, Sonbhadra, Shravasti, St.kabimagar, St. Ravidasnagar, Kaushambi, Ambedkamagar, Balrampur, Chandauli and Kushinagar but in 1980 there were only 15 districts, all the new district which have been created after 1980 are included in the same district from which they were created due to lack of separate data.

Some important characteristics of few selected districts are given below:

## ALLAHABAD

The district of Allahabad forms the tail end of Allahabad division to the south and it lies between latitude  $24^{\circ} 47'$  and  $25^{\circ} 47'$  North latitude and  $81^{\circ} 19'$  and  $82^{\circ} 29'$  East longitude. On the north, it is bounded by the districts of Pratapgarh and Jaunpur. On the east lies the district of Varanasi and on the south east the district of Mirzapur.



Topographically, the district may be divided into three parts—The trans-Ganga tract or the Gangapar plain, the Doab and the trans- Yamuna tract or the Yamuna tract. These are formed by the two main rivers the Ganga and the Yamuna.

Main languages are Hindi, Urdu and Bengali and religions are Hindus, Muslims, Sikhs, Christians, jains, and others are found.

The district at present comprises 9 tehsils and 28 community development blocks. Main crops of this district are Paddy, Rice, wheat Barley, Sugarcane, Maize and Arahar.

## AZAMGARH

The district of Azamgarh is situated in eastern part of the state which constitute the Gorakhpur division and comprise a somewhat irregularly shaped tracked, lines south of the Ganga river between the parallels of 25° 38' and 26° 27' North latitude and 82° 10' and 83° 52' East longitude. Azamgarh is bounded on the east by Mau, on south by Ghazipur and Jaunpur and on the west by those of Jaunpur and Sultanpur .On the north lie the districts of Faizabad and Gorakhpur. Total area is 3214 square kilometers and the headquarter is located at Azamgrah.

Main languages are Hindi and Urdu and religions are Hindus, Muslims Sikhs, Christians, jains, and others are found.

Azamgarh is fairly well wooded district except for the southern tract. The commonest tree is mangoes, but gular, mahua, sheesham, neem, peepal, bargad, jamun, imli, are all found in single or in clumps.

The district at present comprises 5 tehsils and 21 community development blocks. It has 13 towns and 4133 villages (3721 are inhabited and 412 uninhabited villages). Main crops of this districts are paddy, arahar, sugarcane, wheat, barley and maize.

## **BALLIA**

Ballia is the eastern most district of Uttar Pradesh bordering the Bihar state. The boundary between Ballia and Bihar is determined by deep stream of rivers Ganga and Ghagra. The district lies between the parallels of 25° 33' and 26° 11' North latitude and 83° 38 'and 84° 39' East longitudes. It is bounded on the west by Mau, on the north by Deoria. On the north east and south east by Bihar and on the south west by Ghazipur. Total area is 2988 square km and the district headquarter is located at Ballia.

Main languages are Hindi and Urdu and religions are Hindus, Muslims, Sikhs, Christians, Jains and others are found.

The district at present comprises 4 tehsils and 17 community development blocks. It has 9 towns and 2339 villages (1792 are inhabited and 547 uninhabited villages). Main crops of this district are paddy, arahar, sugarcane, wheat, barley.

## **BASTI**

The district lies between the parallels of 26° 25' and 27° 30' North latitudes and 82° 13' and 83° 18' East longitudes. The district lies between Gorakpur and Gonda on the west. On the south Ghagra separates it from Faizabad while on the north by Siddharthnagar district. Total area of the district is 4284 square kilometers. The district headquarter is located at Basti.

Main languages are Hindi and Urdu and religions are Hindus, Muslims Sikhs, Christians, Jains and others are found.

The district at present comprises 4 tehsils and 19 community development blocks. It has 7 towns and 4932 villages (4504 are inhabited and 428 uninhabited villages). Main crops of this district are paddy, rice, wheat, barley and maize.

## **DEORIA**

Deoria constituting a district of Gorakpur division occupies the stream northeastern corner of Uttar Pradesh. It is bounded by the Gorakpur on the west, Maharajganj and Padrauna district in north and Bihar state in east. On its south Ghagra separates the district of Mau and Ballia from it.

Main languages are Hindi and Urdu and religions are Hindus, Muslims, Sikhs, Christians, Jains, and others are found.

The district at present comprises 3 tehsils and 15 community development blocks. It has 10 towns. Main crops of this district are paddy, rice, wheat, barley, sugarcane and maize.

## **FAIZABAD**

Faizabad is situated in the eastern part of Uttar Pradesh. District of Gonda and Basti are located on the north of this district. On the south lies Sultanpur, on the west Barabanki and on the east Akbarpur. The main trees of this district are Neem, Babul, Mango, Jamun and Mahua.

Main languages are Hindi and Urdu and religions are Hindus, Muslims, Sikhs, Christians, Jains, and others are found.

The district at present comprises 2 tehsils and 9 community development blocks. It has 7 towns and 1028 villages as 1981 census of which 995 villages are inhabited and 33 are un-inhabited). Main crops of this district are paddy, rice, wheat, barley, sugarcane and maize.

## **GHAZIPUR**

Ghazipur is situated between 25° 19' and 25° 94' North latitudes and 83° 04' and 83° 58' East longitude. It lies in the eastern region of the Varanasi division. It is nearly at a height of 225c.m. above the mean sea level. The Ganga River is on one side of Ghazipur while on the other side there is Karamnasa river which separates Ghazipur from the Bihar state. The extreme length of this district from east to west is about 90 kilometers and the maximum breadth from north to south some 60 kilometers. As a whole, the district is of fertile plain except few. The total area of the district is 3377 square kilometers. The district headquarter is located at Ghazipur.

The main languages of this district are Hindi and Urdu and religions are Hindus, Muslims, Sikhs, Christians, Jains and others are found.

The district at present comprises of 4 tehsils and 16 community development blocks. It has 8 towns and 2661 villages (2583 are inhabited and 78 uninhabited villages). This district is agricultural based; accordingly 83% of the total population is engaged in agricultural activities for their sustenance.

## **GONDA**

Gonda is situated between 26° 46' and 27 °50' North latitudes and 81° 33' and 82° 46' East longitudes. It is situated on the north of Faizabad division. Total area of this district is 7352 square kilometers. The district headquarter is located at Gonda.

Main languages are Hindi and Urdu and religions are Hindus, Muslims, Christians, Sikhs, jains, and others are found.

The district at present comprises 7 tehsils and 25 community development blocks. It has 10 towns and 2842 villages (2818 are

inhabited and 24 are uninhabited villages). Agriculture is important source of income of the people of this district. The main crops are paddy, wheat, gram etc.

## **GORAKHPUR**

This district comprises a huge stretch of country lying to the north of the river Ghagra, the deep streams of which form the boundary of Azamgarh and Mau to the south. On the west the border marches with Basti and on the east with the district Deoria. Total area of this district is 3324 square kilometers. The district headquarter is located at Gorakhpur.

Main languages are Hindi and Urdu and religions are Hindus, Muslims, Sikhs, Christians, Jains, and others are found.

In general, the district is level plain, densely populated and most parts of this district available for cultivation. The forest in this district of great economic value. The important trees are jamun, samel, jhigna, mahua, and amla.

The district at present comprises 6 tehsils and 21 community development blocks. It has 7 towns and 3319 villages (2880 are inhabited and 439 un- inhabited villages). Main crops of this districts are wheat, rice, jowar, bajra, barley, maize etc.

## **MIRZAPUR**

The district of Mirzapur is lying on the outskirts of Varanasi division between the parallels of 23° 52' and 25° 30' North latitude and 82° 7' and 83° 53' East longitude. It is bounded on north by Varanasi, on the northwest by Allahabad, on the south by Madhya Pradesh and Sonbhadra district. The headquarters of this district is located at Mirzapur.

Main languages are Hindi and Urdu and religions are Hindus, Muslims, Sikhs, Christians, Jains and others are found.

The district at present comprises 4 tehsils and 12 community development blocks. It has 4 towns and 1987 villages (1722 are inhabited villages and 265 un- inhabited villages). Main crops of this district are paddy, rice, wheat, barley, sugarcane, maize and arahar.

## VARANASI

Varanasi is one of the Eastern most district of Uttar Pradesh. Bhadoi district lies on the west of it, Jaunpur is in the northwest, Ghazipur is in the northeast while Shahabad district of Bihar state bounds it from east. The district is picturesquely placed on both sides of the Ganga river. The northern part of it is alluvial plain while the southern part is having hilly tracks of projecting mountainous ranges of Vindhyas.

Main languages are hindi, urdu and Bengali and religions are Hindus, Muslims, Sikhs, Christians, jains, and others are found.

The district at present comprises 4 tehsils and 17 community development blocks. It has 15 towns and 2970 villages (2642 are inhabited villages and 328 uninhabited villages). Main crops of this district are paddy, rice, wheat, barley, sugarcane, maize and arahar.

From the table 2.1, it can be seen that agriculturally, the net sown area is about 5,428,405 hectares, which is about 63% of the total area of this region. The total cropped area is about 8,229,196s hectares. The net irrigated area is about 41% only while two-third of the total population are engaged in agricultural activity and about three-fourth of total population lives in rural areas of this region.



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It has been observed from the above mentioned statistics that the net sown area is only about 63% which is not sufficient as it would have been required/needed. Therefore, it is very important to increase net sown area as much as possible not only for increasing production but also for providing land to landless labourers or for improving the size of existing holdings etc. In the long run, increasing sown area will help in the rural development and will reduce the regional imbalance in the region. However, before going into the details of the problem, it will be fruitful to study the physical conditions of eastern Uttar Pradesh.

## **II-2 PHYSICAL SETTING**

It is concluded from the above discussion that the region of eastern Uttar Pradesh represents more or less monotonously/ homogeneous characteristics of the physical environment in its structure, relief, climate and soil. The physical features of eastern Uttar Pradesh are similar to those found in others parts of the Uttar Pradesh. This region contains vast alluvial plains having gentle slope from north-west, west and south towards east. The rocks are everywhere of alluviate and sub aerial formation massy beds of clay either sandy or calcareous, corresponding to the silt, mud and sand of the new rivers. Characteristics of the clay parts of the alluvial plains particularly in the older parts of the deposits are abundant dissemination of impure calcareous matter in the form of irregular (concreations -kankar (hindi version)). The formation of these kankar concreations is due to the segregations of the calcareous material of the alluvial deposits into lumps or nodules.

The alluvial deposits are divided into bangar and khadar lands. The hangar lands are the older alluviums while the khadar lands are newer alluviums. The bangar lands occupy the higher grounds above the general floods levels of the main rivers and their tributaries. These lands are not

flooded by rivers during the rains. These lands also contain carbonates and lime in the form of small nodules of irregular shapes and size called as kankar. The khadar lands form flood plains along the bank of river. The most important materials in hangar lands is clay which is at some places becomes loam to sandy loams while the khadar lands are composed of sands, silt, and clay.

## II-3 GEOLOGICAL STRUCTURE

Geologically, the Eastern Uttar Pradesh forms a part of Indo-Gangetic plains, which came into existence in the Pleistocene period. The plain lies between the newly upheaved mountains (Himalayas) in the north peninsular India in the South. Various hypotheses have been put forward to explain the geological evolution of the plain. Edward Suess (Austrian geologist) has suggested that it is "fore-deep" formed in front of high crust of the Himalayas as they were checked in their southwards advances by the inflexible solid landmass of the peninsula. On this view, the depression is of synclinal nature- a synchromium (Wadia 1981) on the basis of physical and geotectonic considerations. Sir S. Burrard considers that the Indo-Gangetic plains occupies the "rift-valley" a portion of the earth surface sunk in a huge crack, in the sub crust between parallel faults on its two sides. This rift extends from the surface far down into the crust about 32 kilometers deep and is subsequently filled up by alluvium. This view has got few geological facts in its support but has not been adopted by geologists who believed that the Indo-Gangetic depression is a true "fore-deep" a down wrap of the Himalayan foreland of variable depth converted into the flat plains by simple process of alluviation. On this view, a vigorous sedimentation took place and deposition kept pace with subsidence giving rise to the tectonic trough of India (Wadia 1953). A third and more real view about the origin of these regions is a sag in the crust

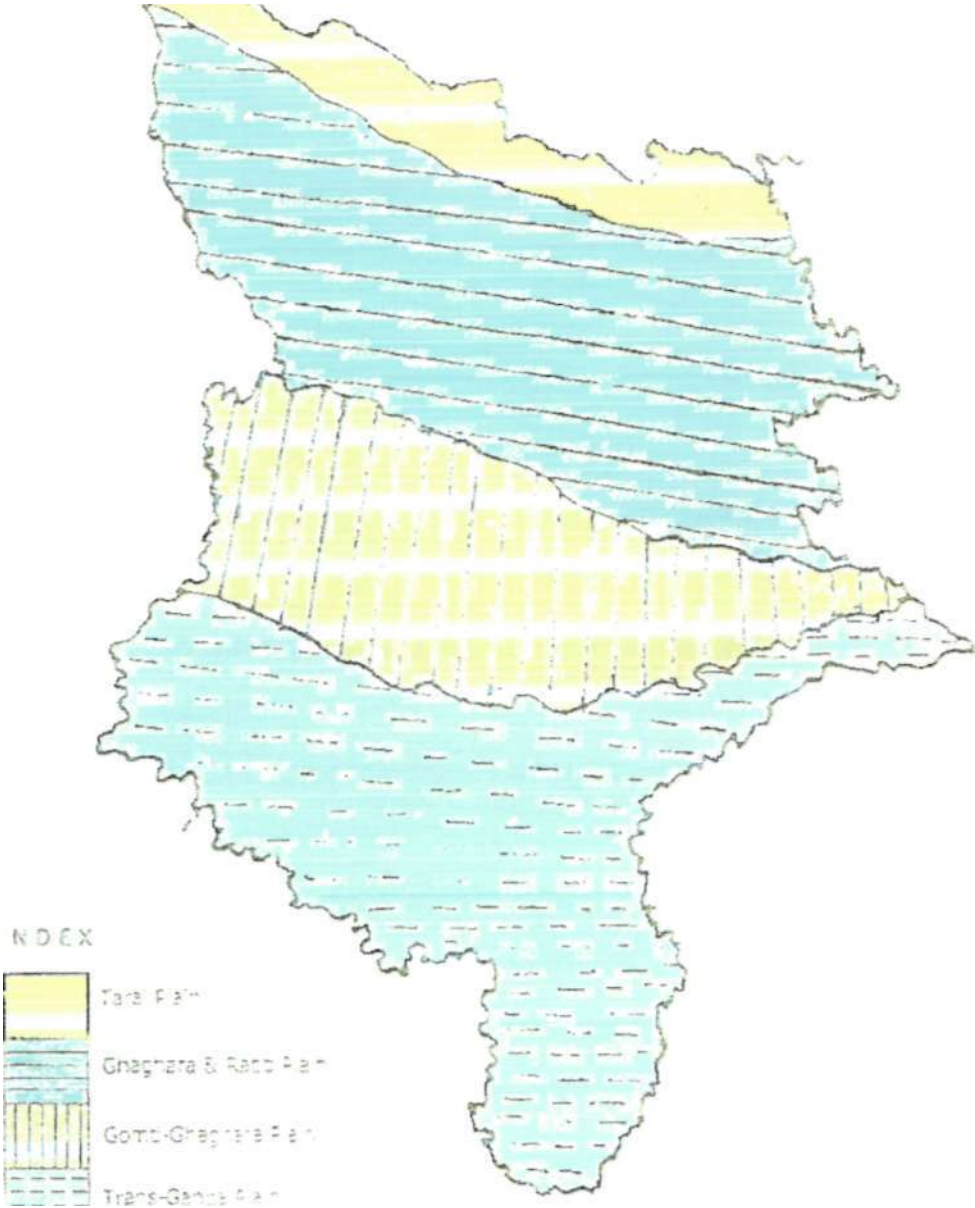
formed between the northward drifting Indian continent and comparatively soft sediments accumulated in the Tethyan Sea which later on were crumpled up and in the form of mountain system (Krishnan 1982). A genial view accepted about this origin of the plain, in that, it has been formed by the buckling down of the Northern border of the peninsular shield beneath the sediments thrust over it from the north (Krishnan 1982) whatever may be the cause which gave birth to this trough but once it was formed. The depression was filled up with sediments brought by rivers flowing from the Himalayas and the peninsula (Sharma & Coutinho, 1980).

As far as the thickness of alluvial deposits are concerned, recent gravity magnetic and seismic explorations shows that it varies from less than 1000 to over 2000 meters (Wadia, 1953). On the basis of geographical observations, Glennie (1932) estimated that its thickness to be about 1950 meters. Boring mainly done for artesian wells which are penetrated upto only 1606 meters in the recent alluvial strata (Krishnan, 1982). Oldham (1971) on the basis of geographical considerations postulated the depth of the trough to be about 4600 meters near its northern limits. Aeromagnetic surveys of the Ganga basin indicate that the basement rocks at the depth of about 7000 meters and the geographical indications of the basement are at depth of 6000-7500 meters below the surface (Krishnan, 1956). The data collected by the surveys of India in Bihar shows that the thickness of deposits in the basin may be 1800 meters and probably less than 3000 meters.

## **II-4 PHYSIOGRAPHIC STRUCTURE**

Physiography of the study area exercises a direct influence on land use, particularly through elevation, ruggedness, aspect and slope. It also affects the ease of cultivation and degree of accessibility. Moreover,

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Fig.2-2

prediction of land capability has generally been used upon land types, combining common features of landforms, soil and vegetation. It is essential to know the landform type of agricultural relevance for understanding the suitability of the area for irrigated farming, commercialization and mechanization.

Physiographically, the Eastern Uttar Pradesh is divided into four parts, which are as follows:

- (1) The Terai Area (plain)
- (2) The Ghagra and Rapti plain
- (3) Gomti-Tons-Ghagra plain
- (4) Trans Ganga plain

#### **n-4(A) THE TERAJ AREA (PLAIN)**

The Terai area extends from west to east along the boundary of Nepal. This area is certainly a continuation of the Nepalese Terai belt. The Terai tract is roughly a 15-24 kilometers, wide marshy tract and lies between the International boundary of India and Nepal. It is a low-lying marshy stretch of land with slight gradient of about 1.8 meters) infested with reeds, tall grasses or forest under natural conditions. The area is marked by drainage obstructive and has high water table (3-5 meters in summer) and fertile land, through there is a lightly leached soil saturated with moisture and high clay factor. The entire tract is shallow basins, which is frequently flooded during the wet monsoon month when a large number of streams swell considerably submerges it under water. The swift flowing streams generally brought down an enormous quantity of silt & clay deposited in this tract. Consequently, the area is converted into fertile which becomes much suitable for the cultivation of rice.

## **II-4 (B) GHAGRA AND RAPT! PLAN**

This plain is bounded by terai in the north and by khadar and bangar in the south. This plain is lying between the Ghagra and Rapti rivers including the bhangar lands of Gonda, Basti, Gorakhpur and Deoria districts. The plain is almost an alluvial. The region varies in character from the Terai. Here the water level varies from place to place, though the difference is insignificant. The soil varies from sandy loam in the west to silt loam in the east. Agriculturally, this tract is one of the most important regions for the cultivation of rice and sugarcane.

## **II-4 (C) GOMTI-TONS-GHAGRA PLAIN**

This plain is found in the fertile parts of eastern Uttar Pradesh. This part includes the districts of Faizabad, Azamgarh, Ballia, northern parts of Sultanpur and some parts of Jaunpur. In this region, the khadar is very wide because the rivers meander through this area. Moreover, they often change their courses. The fertility status of the soil further goes down because of the fact that the Ghagra brings a lot of sand in the plain as it descends from the mountains so that the common area of this river has a higher percentage of sandy silt. Soil is generally silt loam and suitable for cultivation of rice and sugarcane.

## **II-4 (D) TRANS GANGA PLAIN**

This plain is lying between Ganga and Karamnasa river includes the area of Allahabad, Mirzapur, Varanasi, Ghazipur and Ballia districts excluding the khaddar land as well as southern half of Zamania tehsil of Ghazipur district. The distinguishing feature of this area is the absence of drainage channels. There is hardly any important lake. The river Karamnasa is sometimes subjected to flood and occasionally flow over

the adjoining land. The soil is well and suitable for the cultivation of rice, wheat and sugarcane.

## **11-5 CLIMATE**

Favorable climatic conditions are absolutely necessary for agriculture to flourish. The vagaries of climate can create floods and droughts or untimely spells of too high too low temperatures, thunderstorms or hails, cold or hot winds would seriously affect the growth and the yield of crops. Therefore, the potential crop producing ability of a given area is dependent primarily upon the existing climate as well as soil conditions under which the crops in question must be grown. The climate of eastern Uttar Pradesh is characterized by seasonal rhythm marked by southwest and north -east monsoons. The two agricultural seasons Kharif and Rabi are closely follow the wet (south-west monsoon and the north-east monsoon). Mostly, there are four distinct seasons, which are commonly recognized:

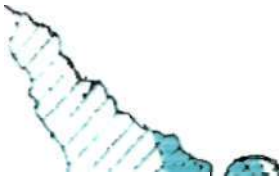
- (1) The cold weather season (Dec-Feb)
- (2) The hot weather season (March mid-June)
- (3) The season of general rains (mid June-mid Sept)
- (4) The season of retreating monsoon (mid Sept -Nov.)

### **II-5 (A) THE COLD WEATHER SEASON (Dec-Feb.)**

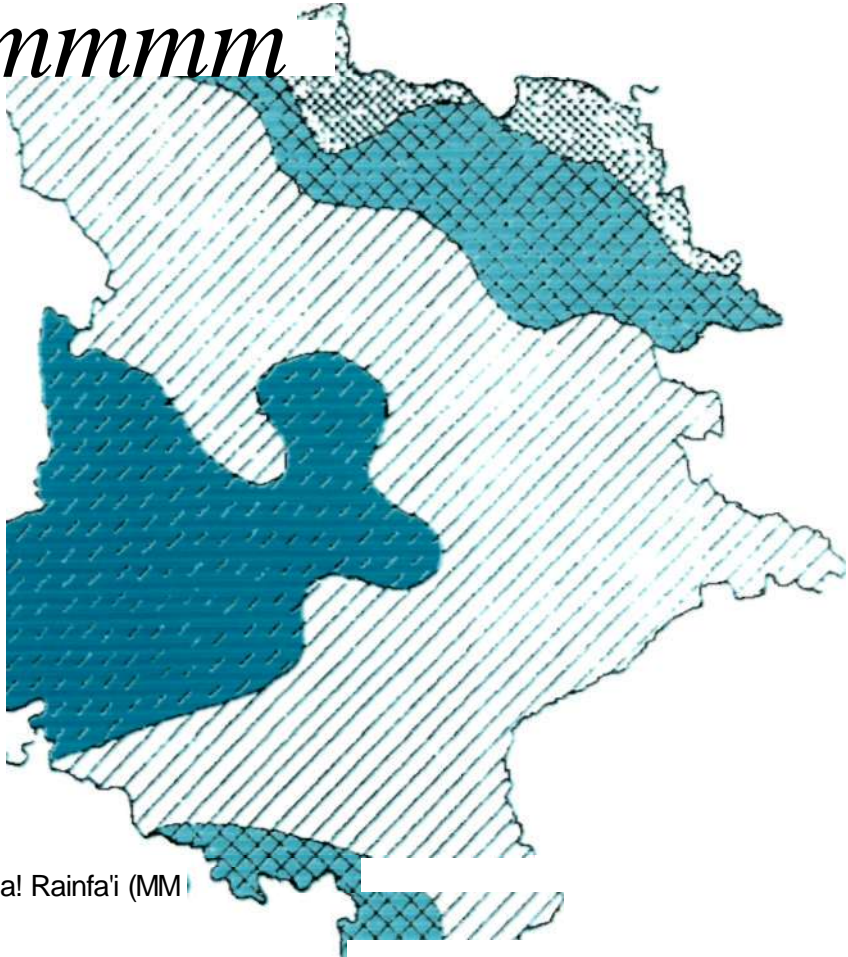
This season is characterized by cold and dry air. Sky is generally clear and cloud cover rarely exceeds 2/10". During this season, the temperature falls and pressure rises and due to this, whole region comes under the influence of high-pressure belt. The direction of prevailing winds is normally from east and northeast to west and southwest. The winds are dry and light and generally blow at an average speed of about 3.2 kilometers perhours. Days are warm and nights are cooled. The

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rainfall is very small, irregular and sporadic and is caused due to western depressions. January is the coldest month when the temperature varies between 12.5° C to 17.5 °C. The temperature starts to rise in the month of February and ranges between 13 °C to 25° C.

## **II-5 (B) THE HOT WEATHER SEASON (March to mid June)**

The second half of the dry monsoon period includes the months of March to mid June. This period is characterized by rising temperature and fall in pressure. The mean monthly temperature in March varies from 24 °C to 29 °C at different places. The temperature continues to rise during April to June. The month of May and June recorded exception high temperature as high as 43 °C or 44 °C and even more than 45 °C for few days. The days are characterized by intensive heat, dry air and low relative humidity. A regular phenomena of this season is the blowing of hot and dry winds locally called as LOO which blow with great velocity of about 5.5 kilometer per hour in the month of April. It reaches its maximum in June when its velocity is about 10.5 kilometers per hour. The humidity is occasionally falling 2% or 3% in the afternoon.

## **n-5 (C) THE SEASON OF GENERAL RAIN (Mid June - Mid Sept.)**

On account of excessive heat of the summer months, a low pressure is developed in the northern part of India and by the mid - June it brings a complete reversal in the air movement. This is the season of general rains, which is characterized by the arrival of humid oceanic currents; fall in temperature, cool air and rainfall. The maximum temperature decreases from about 40 °C in the month of June to about 35 °C in the month of July.

The relative humidity increases from 30% in May to 75% in last of June and about 85% in July and August. The time of onset and retreat of

monsoons varies from year to year. Generally, in eastern Uttar Pradesh it sets in by the mid of June and continues till the end of September, July and August are the rainiest months. The average annual rainfall is about 100 cm out of which about 90% are received during this season.

#### **II-5 (D) THE SEASON OF RETREATING MONSOON (Mid Sept. - Nov.)**

This season is marked by hot and sticky weather and rise in temperature, which starts falling by the end of October. The maximum and minimum temperature in the month of September, which are about 32 °C and 23 °C respectively. The skies are clear and relative humidity falls to less than 50%. The precipitation in October is only about 3 cm. Due to clear skies, the day temperature is high but the night temperature falls.

#### **II-6 DRAINAGE**

Water is a priceless natural gift but is not an ultimate constant. Human history has revolved around conflicts over water and many civilizations were ruined because of mismanaging this most prime natural resource. Rivers, lakes, canals, swamps constitute the inland water resources. Rivers have a definite relation to man, though it varies from place to place and from time to time. The drainage pattern of Eastern Uttar Pradesh shows a close relationship with gentle slope of the land. All the rivers of this area /region has a tendency to flow in zig-zag courses across the plains except the Ghagra which flow more or less in a straight course .The general flow of the rivers are from west to east. The principal rivers and their tributaries are the Ganga, Ghagra, Gomti, Rapti, Sarju, Tons and Gandhak etc.

## **II-6 (A) THE GANGA RIVER**

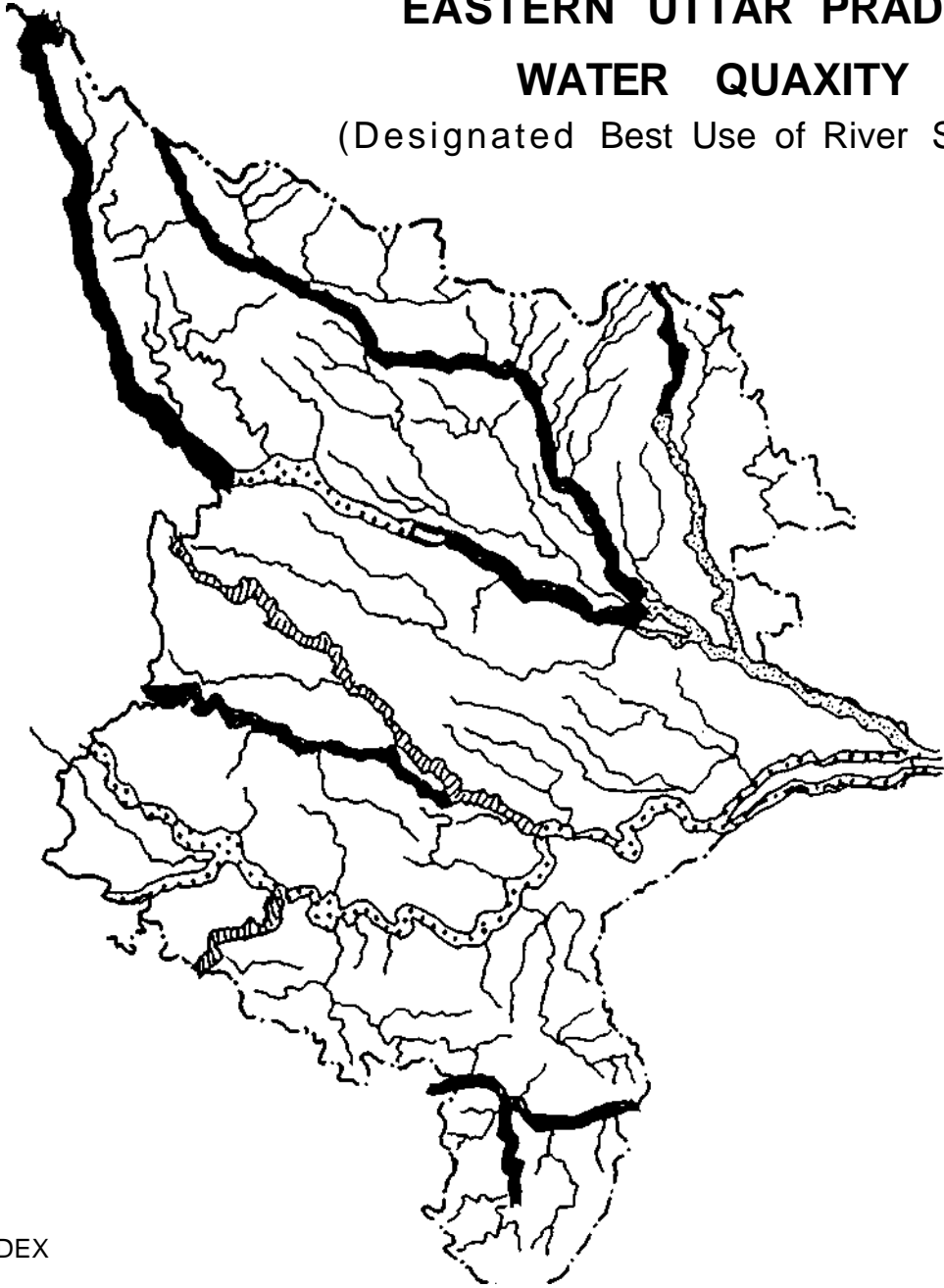
The Ganga river having its source in the snowy caps of Himalaya is the most important river of eastern Uttar Pradesh. The other rivers in this region are the tributaries of the Ganga. The Ganga river is the longest river of India. The Ganga river traversing eastward and enters the region of Allahabad and moving eastward passes the districts of Mirzapur, Varanasi, Ghazipur and Ballia. It receives all its tributaries on left side except Karamnasa. Karamnasa rises in the Kaimour hills and moving along the eastern border of Varanasi districts joins the Ganga on right side and Bara, Chausa in Ghazipur district. The width and velocity of this river varies according to the season. In summer season it shrinks to 200-600 meters but in the rainy season it swells to as much as 1000-3000 meters (1 km - 3 km) beds. During the rainy season, the volume and velocity of the river is considerably increased because of which, the low lying areas are frequently (inundated) the land along the river is rich and produced good yield of crops with little irrigation.

## **II-6 (B) THE GHAGRA RIVER**

The Ghagra River, which is also known as the Sarbhu (saryu) in Pali literature, is an important river of northeastern Uttar Pradesh. It has a number of tributaries like Kauriala, Girwa, Sarda and others. These tributaries have their origin in the mountains of Kumayun and Nepal. The Ghagra is sometime known as Kaoriala in Bahraich district but it is definitely known as Ghagra after its junction with Sarda near Bahram ghat. It is also known as Sargil or Saryu at a short distance in the sacred city of Ayodhya. Ghagra enters the eastern Uttar Pradesh from the district of Bahraich and flowing in east direction. It is joined by Tehri river in Nawabganj block of Qonda district and further south east by Kuwana river in Gorakhpur district, then it further moves eastwards and joins river

# EASTERN UTTAR PRADESH WATER QUAXITY

(Designated Best Use of River Stream^



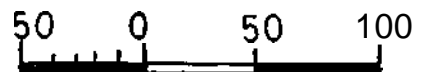
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U3 DRINK 2: DRINK WATER SOURCE WITH  
CONVENTION TREAT MENT FOLLOWED  
BY DISINFECTION

U4 WFISH PROPAGATION OF WILDLIFE  
AND FISHERIES

22 U5 IRRIG IRRIGATION INDUSTRIAL COOLING  
AND CONTROLLED WASTE DISPOSAL

= = U 6 COMFISH COMMERCIAL FISHING RECREATION



Kms

Source •. Regional Environmental Profile Eastern Region^UP

**FIG. 24**

Rapti near Dhohri ghat and finally, it moving eastward and joins the river Ganga at Chhapra in Bihar. The catchments area of this river that is the Ghagra River is more than the river Ganga. Its numerous bars and channels suggest that, it is an aggrading river and has been continuously shifting its course within a belt of about 55 kilometers in places. Due to this large tracts of land from time to time are transferred either to the northern or southern banks rendering the area of the districts subject to variation.

## **II-6 (C) THE RAPTI RIVER**

This river is also an important river of the eastern Uttar Pradesh .it was originally known as Iravati and later its name change to Ravti and then Rapti. Its source lies in the Nepal hills to the north of Bahraich district. It traversing the district as Bahraich, Gonda, Basti and Gorakhpur joins the Ghagra in west of Gaura-Barhaj a confluence town in the district of Deoria. It has three major tributaries on its left side and one small tributary on its right side. It is said that the river formerly is the bed of Baraar, the tributary of Amy river and at times, the Rapti has assumed a more northerly channel as it evident from the varying names of Raptias bushi Rapti or old Rapti. The old Rapti flows in a southeasterly course and while passing from the west of Gorakhpur. It is joined by Rohini river on its left bank and after traversing some distance from Gorakhpur, it is joined by river on its right bank near Amiar-Taal and finally it joins the river Ghagra near Gaura-barhaj.

## **II-6 (D) THE GOMTI RIVER**

The Gomti river enters the eastern Uttar Pradesh through the districts of Sultanpur and passing districts. It joins the river Ganga at Saidpur tehsill in Ghazipur district. It flows in an easterly and

southeasterly direction in the region. The bed of this river is deep and it is well defined but the stream has a low velocity, which never exceeds more than 7 kilometers per hour even at the time of flood.

During the rainy season, the width of the stream exceeds 3 kilometers while in hot weather; it is not more than 100 meters. In some places along the riverbank, there may be some narrow strips of alluvial lands but they are of little value for cultivation as the river brings little silt and much sand during high floods. On its left bank, the river Gomti is joined by the river Sai, which has a deep bed and broken banks at some places by ravines. The river Gomti before emptying itself in the Ganga, receives another tributary called Nand which runs dry during the hot weather but during the rains receives a large volume of water from the country on either sides or swells to a considerable size. The Gomti is navigable in its lower course.

## **II-6 (E) THE GANDAK RIVER**

This river touches the extreme northeast corner of eastern Uttar Pradesh and has a little effect. It rises from the snowy ranges of Nepal, it flows through a George and living its hilly course near triveni about 16 kilometers north from its entrance into the region.

This Gandak river is probably most dangerous river of the region and forms a bulge towards the west for some distance and then flows southeast having most of its course in Bihar state and finally it joins Ganga near Patna. The river Gandak is voluminous river with a water discharge 1000 cubic meters per second during dry months. This river is usually subjected to violent and sudden floods in beginning of the monsoons season and causes great damage to kharif crops, catties and houses. It creates great problems in villages that come in its way.

## **II-6 (F) THE SARJU RIVER**

This river enters the districts of Bahraich and joins one of the southerly channels of the Ghagra known as Badrauhan Nala. Then about 1.5 kilometers east of the village Haraiya it leaves the Badrauhan Nala and flows towards southeast. Near Mau district, this river is joined by another important tributary -the tons, which is perennial but maintains only a sluggish current of water in the dry months. The bed of sarju after its confluence with the tons tributary becomes deep and broad. In this lower course, the river sarju, on its right bank it is joined by another tributary -the bhainsahi.

About 4 miles or 6 kilometers before its confluence with the Ghagra, the Sarju river on its right bank is joined by the Mangai tributaries river. Although the mangai drains a fairly large area, it receives no tributary of any importance. The presence of numerous ox-bow lakes near the left bank of its middle and lower courses suggest that formerly the river had probably northerly course and joined the Sarju river which is about 13 kilometers west of the present confluence.

## **II - 7 SOILS**

Studies in the genesis of soils are of vital importance for an understanding about the origin, formation and characteristics of soils. These studies further help in soil classification and making proper decision for appropriate, land use and soil management. The area of eastern Uttar Pradesh is a broad belt of alluvial soil. Various authorities have prepared the soil map of India and even the soil map of Uttar Pradesh from time to time. These maps have given a generalized picture and valuable information of the soils in eastern Uttar Pradesh. In these maps, the classification of the soil has been attempted on the basis of colors, texture, and availability of water and the level of land. This

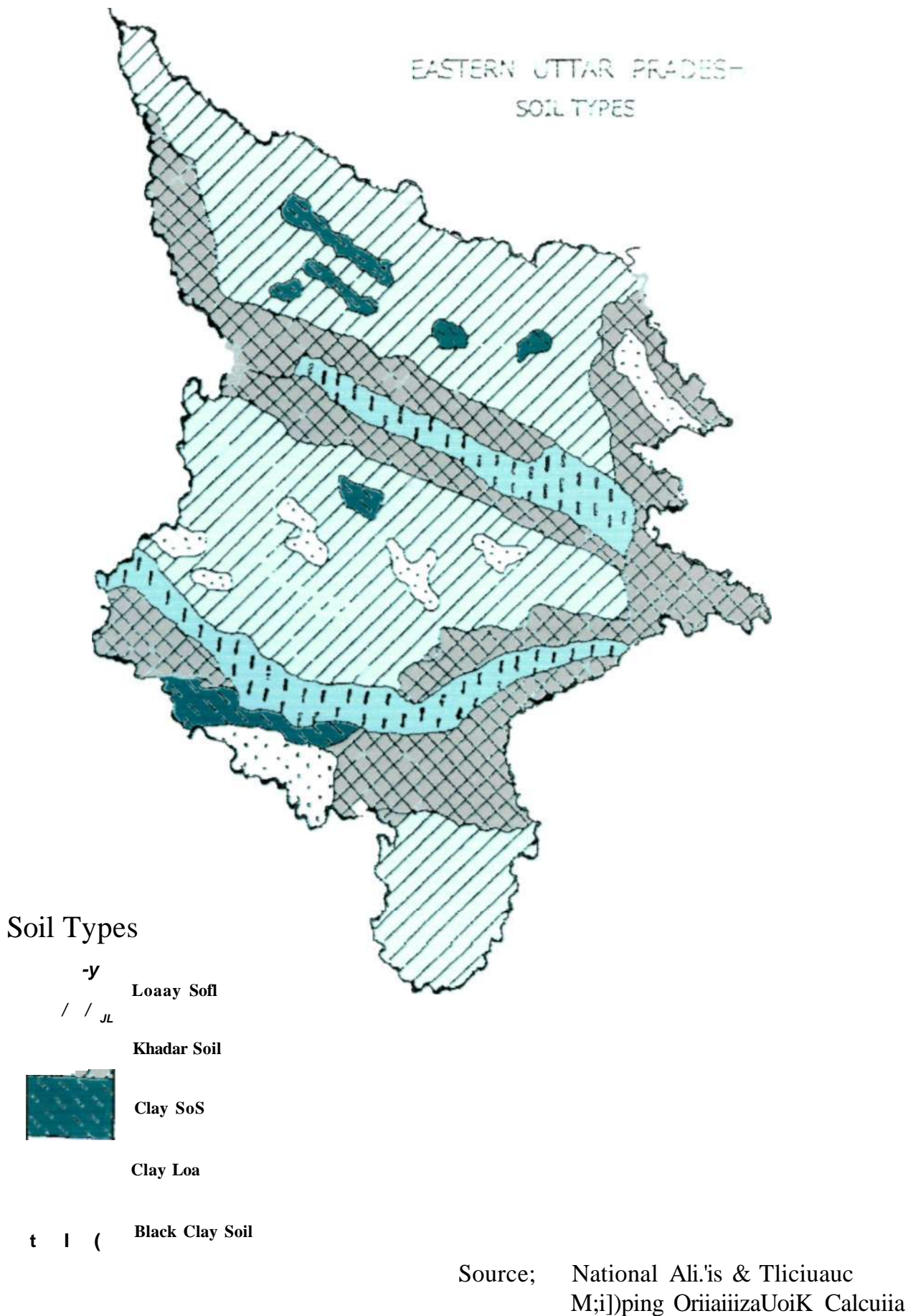


Fig. 2-5



classification is mainly empirical in nature and undertaken for the assessment of revenue. Each and every type of soil has given its local name such as Domat, Dhankar and Matiyar. which have adopted in the region during the consolidation of holding. The soils of the Eastern Uttar Pradesh are made up of alluvium, which is brought by the rivers Rapti, Ghagra, Gomti and Ganga. These rivers have been greatly affected by the local climate, topography and vegetation. The alluvial soil of Eastern Uttar Pradesh has been divided into two broad geological divisions, which are:

- (1) The new alluvium known as khaddar and
- (2) The old alluvium known as banger.

The newer alluvium (khaddar) is in the process of building while the older alluvium (banger) is in the process of denudation. The newer alluvium occupies the flood plains of the river and their tributary as a result of which the constituents of such lands are renewed every year where as the older alluvium occupies the level plains above the general floods limits of the main river and their tributaries. The alluvium chiefly consists of various grades of sand, silt and clay. A characteristics of the clayey part of the alluvial plains is the abundant dissemination of impure calcareous matter which is in the form of irregular concretions which are known as kankar and the soils which are found differ greatly in texture and consistency ranging from the sands through loams and silts to heavy clayey that are ill drained and are sometimes charged with injurious accumulation of sodium salts producing a sterile deflocculated conditions called Usar. At places where the soils is impregnated with a high percentage of acidic or alkaline salts it is known as Usar.

### **11-7.1 KHADAR OR SANDY SOIL (BALUA)**

This soil is markedly sandy soil adjacent to the riverbank, but away from these banks. It improves in texture and shows an increase in the percentage of silts. This of soil is used for the cultivation of millets and Kharif pulses while the silt sand is used for the production of millets in the Kharif and for barley or gram in the Rabi.

### **II-7.2 BHANGAR SOIL**

This soil is of many types: -

Loamy soils (domat)

Clayey loam (matiar)

Clayey (dhankar)

Black clay (karial)

#### **II-7.2(a) LOAMY SOIL (DOMAT)**

In the entire Eastern Uttar Pradesh the dominant soil is loamy soil. The surface soil is yellow to brown in colour with subsoil, which is brownish yellow indicating good drainage. Due to open and light texture of the soil its water retention capacity is low but if irrigation facilities are available, it is capable of producing good crops.

#### **II-7.2(b) CLAY LOAM (MATIYAR)**

The colour of this soil is grey or yellowish grey at surface and which is in the lower horizons deepens to a dark grey colour. In these soil kankar may occur at various depth varying from 2-4 feet. Due to the presence of kankar, during the rainy season bodies of water at places are held up and stagnate and this conditions/sifaations response -well to transplanted rice

### **II-7.2(c) CLAYEY (DHANKAR)**

The colour of this soil is grey to dark grey in colour. It has a compact and clotty structure. The soil as its local name indicates largely given to the cultivation of transplanted rice but this soil is characterized by salt efflorescence and wherever the soil occur in large proportion the land is not used for cultivation and therefore, this soil is of little agricultural importance.

### **II-7.2 (d) BLACK CLAY (KARIAL)**

The colour of this soil is black. This soil is also known as regur soil. This soil is suitable for the cultivation of cotton. Due to moisture retaining capacity is high so that after a normal rainy season, the soil can produce a winter crops without irrigation. But when the soil is dry. it becomes very stiff and splits up to produce great fissures. In fact, ploughing and sowing are almost impossible in dry karial soil and irrigation is impracticable, since water is bound to sink all too rapidly through the cracks in the soil. Owing to the difficulties of irrigation, agriculture is dependent on rainfall and a failure of the monsoon; rain involves the loss of both the Rabi and Kharif crops.

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# **CHAPTER -III**

## **LAND UTILISATION**

### **III-1 CONCEPTUAL FRAMEWORK**

Land use is perhaps the most basic concept of agricultural economy. It is the key to an understanding of geographic adjustment of the agricultural resources. Moreover, regional land use patterns are the geographical expression of a large number of societal decisions made at different times for very different reasons which are responsible for an expansion of one category of land use at cost of other.

Land use patterns, although, are directly related to the physical controls yet, there are several human and economic elements, which are responsible for land use and its distribution. It is the set of varying social values and certain institutional controls, which create different patterns of land use within the limitations imposed by different agro-physical controls. The impact of physical factors is subtle and interwoven with spatio-economic forces. The population increase leads to a major shift in the pattern of land use.

Land use in any region of the world varies due to the variations in the distribution of sunshine, rainfall, topography of the land, drainage conditions, and soil characteristics of the region. The spatial differentiation in these elements affects the purpose of land use for agriculture.

Before the using of land we have to make proper planning. The practical purpose of making the use of land is for growing /cultivates crops in harmony with the environment. This is to record the distribution

of land put to various uses in different environmental and socio - economic conditions and to put the changing needs and pressure of ever increasing population. The main function of planning is to frame a guide for land use in such a way that all the available land resources are put to the most beneficial use together with their conservation for future generation. The meaning of land use sometimes restricts to various uses of land, but in its use, we find overuse, under use and misuse, which assist us to make a planning in order to attain maximum utilization of land.

Mostly in any region or area of the world, the use of land are maintained and classified under the following major categories:

- (1) Total reporting area
- (2) Forest
- (3) Land under non- agricultural uses
- (4) Barren and uncultivated land
- (5) Permanent pastures and grazing land
- (6) Land under miscellaneous (trees, crops, groves etc.)
- (7) Culturable wasteland
- (8) Fallow land
- (9) Current fallow land
- (10) Net sown area
- (11) Area sown more than once
- (12) Gross cropped area
- (13) Cropping intensity

As any area /region of the world we are trying to classify of Eastern Uttar Pradesh as mention above. Figures relative to the above classification for Eastern Uttar Pradesh are given below in table 3.1 for the three points of i.e. 1980, 1990 and 2000

**TABLE (3.1)**

Land use pattern in Eastern Uttar Pradesh- a trend of change (in 000 hectares)

	1980	1990	2000
Reporting area	8691355	8626855	8645280
Forest	825639(9.50%)	925413(10.72%)	826520(9.56%)
Land put to non agricultural uses	855267(9.84%)	921356(10.68%)	936066(10.82%)
Barren and agricultural land	211652(2.43%)	173746(2.01%)	168199(1.94%)
Permanent pasture and grazing land	16910(0.19%)	23604(0.27%)	19851(0.22%)
Land under miscellaneous	182439(2.09%)	141324(1.64%)	198451(2.29%)
Cultivable / culturable waste land	104663(1.20%)	144875(1.25%)	143324(1.66%)
Fallow land	248697(2.86%)	241564(2.80%)	215331(2.50%)
Current fallow land	404384(4.65%)	378574(4.39%)	385955(4.46%)
Net sown area	5641524(64.91%)	5984335(69.36%)	5714409(66.09%)

Area sown more than once	2632461(30.29%)	2833173(32.84%)	2968335(34.33%)
Total/gross cropped area	7792984(89.64%)	7784820(90.23%)	8692744(100.54%)

Source: Economics and statistics division, state planning institute  
Uttar Pradesh, Lucknovv.

### III-2 TOTAL REPORTING AREA

The reporting area in Eastern Uttar Pradesh for land utilization purposes was estimated as changing trend in three points of time i.e. 8691355 hectares in 1980, 8626855 hectares in 1990 and 8645280 hectares in 2000. It can calculate that land uses for different purpose like forest land, barren and uncultivated land, land under non-agricultural uses, permanent pastures and grazing land, land under miscellaneous, cultivable waste land, fallow land, net shown area more than once, gross cropped area and cropping intensity.

#### III-2a FOREST LAND

Keeping in view the multifarious tangible and intangible services rendered to humanity, the forests their management and conservation have a prime concern. Of the total reporting area of eastern Uttar Pradesh only 825639 hectares (9.50%) of the area is reported as the forested area during 1980, 8626855 hectares (10.72%) in 1990 and 8645280 hectares (9.56%) in 2000, which shows variation in three points of time. During 1980 to 1991, total reported forest area has increased by 1.22 percent. It was increased due to some measures taken by the government to prevent



deforestation and maintain ecological balance. Government has taken said measures due to the international pressure to control global warming. Awareness among the people is also considering an important factor to increase forestation. But it was decreased by 1.16 percent in 2000. It was decreased due to shifting of government concentration from forestation to other issues like family planning and polio alleviation. Most of the forested areas are mainly confined to the Mirzapur, Gorakhpur, Varanasi, Gonda and Bahraich districts. Much more area of the forest is found in Mirzapur but due to the pressure of increasing population, bringing more and more area under cultivation and settlement, the area under forest has constantly decreased.

### **III-2b BARREN AND UNCULTIVATED LAND**

This includes all barren and un-culturable land like mountains, deserts, etc. Land which cannot be brought under cultivation unless at a high cost, shall be classed as uncultivable whether such land is in isolated blocks within cultivated holdings.

This category of land includes all such land which are practically useless or unproductive and virtually unfit for cultivation. This area is covered by sandy soils where not a single blade/row of vegetation grows. The area under barren and uncultivated land account for 211652 hectares (2.43%) during 1980, which decreased to the tune of 173746 hectares (2.01%) and 168199 hectares (1.94 %) during 1990 and 2000 respectively. It was decreased because this barren land has converted into cultivated land and a part of this land is used for industrialization. This type of land is mainly confined to Sultanpur, Allahabad, Pratapgarh, Ballia, and Mirzapur respectively.

### III-2C LAND UNDER NON-AGRICULTURAL USES

A large part of land is not available for cultivation but these lands are considered to be arable land. Non-agricultural uses land covers a wide range of other uses. These lands are used for inhabitation, factories, roads to be used for transportation, canals and reservoirs etc. This category shows decrease of the area from 66089 hectares (0.84%) between 1980 to 14710 hectares (0.14%) between 1990 and 2000. This decrease under this category is due to population control. Under this category, the districts like Allahabad, Pratapgarh, Varanasi, Ghazipur, Deoria, Faizabad, Jaunpur, Azamgarh, Ballia is mainly confined.

### III-2d LAND UNDER MISCELLANEOUS

This denotes all cultivable land, which is not included in net sown area but is put to some agricultural use. The districts like Basti, Faizabad, Gonda, Bahraich, Pratapgarh, Mirzapur, Azamgarh, Ballia are mainly confined to this category of land and it occupied 182439 hectares (2.09%) of the total reporting area in 1980, 141324 hectares (1.64%) in 1990 and 198451 hectares (2.29%) in 2000 which shows variation due to Government's awareness and non-awareness. Most of these lands-are used to grow trees like mango, sheesham, babul and eupifpttf^. >.,

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### **III-2e PERMANENT PASTURES AND GRAZING LANDS**

Permanent pasture and other grazing land include all grazing lands whether they are permanent pastures and meadows or not. Village common and grazing land within forested area shall be under this head.

Taking the area or region of Eastern Uttar Pradesh as a whole then we find that the area under pastures and grazing is not very appreciable. This account for 16910 hectares (0.19%), 23604 hectares (0.27%) and 1985 Ihectares (0.22%) of the total reporting area /region during 1980, 1990 and 2000 respectively. The changing trend of land under this category is mainly due to land kept for reclamation. Most of the pastoral lands are confined in the districts of Allahabad. Ghazipur, Jaunpur, Azamgarh, Basti, Faizabad, and Sultanpur.

### **III-2f CULTURABLE WASTELAND**

As it indicates that the land under this category may be put for cultivation but they are lying as waste on account of number of reasons. The reasons may be enumerated as:

- Encroachment by jungly weeds of kans and paters
- Floods and erosion
- Poor drainage system
- Scarcity of water etc.

Though very low percentage of area constitute as culturable wasteland in eastern Uttar Pradesh. Table shows an increase of 0.05% of land between 1980 and 1990 and 0.41% between 1990 and 2000. The increase in culturable waste land has resulted an increase in the net sown area. The main cause of declaring this land as culturable waste is due to the variations in the incidence and amount of rainfall received. The districts like Allahabad, Pratapgarh, Jaunpur, Mirzapur and Sultanpur are mainly confined to this type of culturable land.

### **III-2g FALLOW LAND**

This includes all land, which was taken up for cultivation but is temporarily out of cultivation for a period of not less than one year and not more than five year. The reason for keeping such land fallow may be one of the following viz., poverty of the cultivators and inadequate supply of water, material climate, silting of canals and rivers, and remunerative nature of fanning. Fallow land is a part of cultivated land but it differs from net sown area in the sense that, at the time of reporting the area covered by this class was without crops, although it was brought under cultivation during the previous agricultural season. The area under this category has declined to the tune of 0.06% between 1980 and 1990 and 0.03% between 1990 and 2000. The highest percentage of fallow land is found in the district of Allahabad.

### **III-2h CURRENT FALLOW LAND**

Current fallow land represents cropped area which is kept fallow during the current year. For example any seeding area, which is not cropped again in the same year, may be treated as current fallow land.

Cropping and fallowing of land is generally practiced alternatively so that in the typical sand soil areas, a fraction of arable land is actually given to crops while the rest may be referred to as either current fallows or other fallows. This practiced presents soil exhaustion and ensures better yields of crops in the year of its cultivation. The concentration of fallow land also varies in accordance with the mount of rainfall. In the year of good rain, the percentage of fallow land decreases where as in the years with insufficient rains, the proportion of such land increases.

### **III-2i NET SOWN AREA**

This represents the area sown with crops. The net sown area category of land use shows the extent of cultivated area or sown area with crops during a year. The extent of net sown area are recorded an increase of 4.45% between 1980 and 1990 and decrease 3.27% between 1990 and 2000. There is a marked variation among the districts of Eastern Uttar Pradesh with respect to the net sown area. The district of Ghazipur, Jaunpur, Azamgarh, Ballia, Gorakpur, Deoria, Basti and Faizabad has the high proportion of area under the category of net sown area where as the districts of Allahabad, Gonda, Bahraich, Pratapgarh have the low percentage of area in the same category. Soil characteristics are the main

factors of variation in the distribution of net cultivated area in this region and other factors which may be accounted for

- A continued population pressure
- A substantial rise in prices of individual commodities
- An increasing demand of food grains.
- Government efforts in extension of services to the farmers etc.

### **ni-2j AREA SOWN MORE THAN ONCE**

When more than one crop is grown on the same field in the same year is included in this category. In the Eastern Uttar Pradesh, the area under this category remains more or less constant with slight fluctuations during the three periods of consideration. From the table, changing trend is found by 2.55% between the year 1980 and 1990 and 1.49% between the year 1990 and 2000. The districts of Pratapgarh, Ghazipur, Jaunpur, Azamgarh, Ballia, Gorakhpur, Deoria, Faizabad and Sultanpur are mainly lying under this category of land use.

### **III-2k GROSS CROPPED AREA**

This shows the total area put under cropping. It was 7792984 hectares (89.66%) of total reporting area in 1980, 7784820 hectares (90.23%) of total reporting area in 1990 and 8692744 hectares (100.54%) of total reporting area in 2000, which shows continuous increase in this head.

### III-3 CHANGES IN CROPPING PATTERN

Changes allocation of area to different crops has undergone a change because of changes in relative profitability of various crops. This turn has been primarily because of improvements in productivity consequent to the adoption of new technology in some specific crops and changes in relative price structure.

Cropping pattern indicates the level of development and economic prosperity of the state. The crop statistic survey used to denote cropping pattern. It indicates the level of development and economic prosperity of the study area. Cropping pattern means the proportion of area devoted to various crops at a point of time. It also refers to the relative arrangement of crops on a farm, region, province or a country portioning due consideration to natural factors (climate, soil), crops efficiency, land capability, socio-economic structure, technological infrastructural extension and national agricultural policy (Pal-et.al., 1985). Cropping pattern may also be defined as the yearly sequence and the spatial management of crops on a given area which have been based on cropping pattern zones developed to divide the country into homogeneous units using the entities like soil and climate besides physical and agronomic criteria, subdivided on the basis of isothermic lines (Saran-et.al., 1989).

Cropping scheme is the plan according to which the crops are raised on individual farms with roles objective of getting the maximum returns from each crops without impairing fertility of the soil. An another view refers to the cropping pattern as that, a relative proportion of an area or region brought in for cultivation of different crops in a given region at a particular of time. Thus, the term cropping pattern denotes a spatial and temporal combination of crops grown in a region. It involves not only of

crop species but also of varieties, mixed or intercropping and crop system (Singh and De. 1978)

It is a dynamic concept as no cropping pattern defers from macro to micro region, both also in space and time and governed largely by the physical, socio-economic and technological factors. The variations in soil fertility, rainfall, and temperature regions in Eastern Uttar Pradesh are invariably responsible for variations in the cropping pattern and productivity levels. A review of overall changes in area, production and yield of major crops is, therefore, essential to bring a clear picture. The growth pattern with reference to crops, assumes special importance in a planned economy because it helps in locating the weakness in the existing programs of agricultural development. In order to analyze the cropping pattern in the region, it would be worthwhile to give some idea about the crops their sowing and harvesting periods.

Agricultural practices in eastern Uttar Pradesh revolve around two main seasons namely, Kharif and Rabi. The sowing in the Kharif season (summer crops) begins generally with the onset of monsoons in mid June while the Rabi season (winter crops) starts the beginning of cold weather i.e. by the end of month of October or early November. The important crops grown in Kharif season are:

Rice (*oryza sativa*)

Maize (*zea mays*)

Jowar (*sorghum vulgare*)

Bajra (*pennisetum typhoides*)

Arahar (*cajanus indicus*) and

Sugarcane (*saccharum officinarum*)

The above crops require relative high temperature and large amount of moisture. The crops grown in Rabi season are



Wheat (*triticum sativum*)  
 Barley (*hordeum vulgare*)  
 Masoor (*Jens culanaris*)  
 Gram (*sicer arietinum*)  
 Peas (*pisum sativum*)  
 Mustard (*brassicae*)  
 Potato (*solanum tuberosum*)  
 Linseed (*linum usitatissimum*)

The above given crops require low temperature and moderate amount of moisture during the period of their growth. The harvesting period of Kharif starts from the month of September to October while Rabi crops are harvested generally during the months of March to April which may extend sometimes by the months of May.

Tables.2 shows the sowing and harvesting periods of major crops grown in eastern Uttar Pradesh.

**Table 3.2**

<b>Name of crops</b>	<b>Sowing times</b>	<b>Harvesting time</b>
Rice	Mid June-august	November- December
Maize	June-July	September- October
Wheat	November- January	Mid march-April
Barley	November- December	March-April
Bajra	June-July	September-

		October
Arhar	June-July	December-April
Gram	October- November	March-April
Sugarcane	October-march	January-march
Peas	October- November	March-April

### III-4 FACTORS AFFECTING THE CROPPING PATTERN

Cropping pattern in agriculture is among other things ultimately governed by the farmers, cropping choices on individual farms. This implies decision making on the part of the farmers in favour of one or preference for one over the other competing crops. These choices are directly governed by specific purposes for which the crops are to be grown and these are conditioned by geo-graphical factor and modified by the emergent social and economic circumstances.

The regional pattern of levels and growth of agricultural output is primarily determined by a combination of physical features like fertility of soil, rainfall, weather etc. in conjunction with available technology and level of inputs. With wide differences in soil fertility and availability of moisture through monsoon and irrigation, the Indian subcontinent has been characterized by large regional inequalities in yield levels and growth of agricultural out put for a long period. These disparities were further aggravated during the British period because of the uneven and regionally differentiated pattern of investment in canal and tank irrigation has continued even after independence because of large regional variations in investments undertaken in multipurpose major, medium and minor irrigation projects and in rural electrification. With the introduction

of high yielding variety of seeds, fertilizer, technology etc. regional differences in the yield levels of agricultural output have further accentuated.

The size of the farm also affects the cropping pattern. The small holders till recently use to devote only a small hectare to cash crops than the large holders. But the empirical studies indicate that now all farmers try to grow cash crops for these bring in money. The land tenures and land systems e.g. under the crop sharing system, the landlord has a dominate voice in the choice of the cropping pattern and this helps in the adoption of maximizing crop pattern adjustments. Changes in the market price, rent, interest, wages etc. availability otherwise of means of transport and the distance from the market also affect the cropping pattern.

For analyzing the position of area, production and yield in eastern Uttar Pradesh in 1980-2001 for three points of times i.e. 1980-81, 1990-91 and 2000-01 have been taken for comparative study.

The data for all the major crops of all districts of Eastern Uttar Pradesh, Lucknow are given below. After 1980 many more districts namely: Mau, Chandauli, Sonbhadra, S.Ravidas, Koushambi, Maharajganj, Kushinagar, Sant Kabimagar, Ambedkamagar, Shravasti, S.Nagar were created which have been included with the same districts from which they were broken up due for comparative studies. Important crops considered for the analysis of this study are cereals which include: rice, wheat, jowar, bajra, barley, pulse crops include gram, arhar, peas and cash crops like sugarcane.

### **III-5 CHANGING PATTERN AND TRENDS OF GROWTH IN AREA, PRODUCTION AND YIELD UNDER MAJOR CROPS**

The distributional pattern of individual crops varies in space and time according to local forces guiding their cultivation. A study of rate of increase or decrease of major crops over time show the cumulative effect of forces playing their part and will help in understanding the direction of agricultural development in the area. Due to the green revolution considerable changes have been taken place in cropping pattern and production in the study area. An attempt has been made to examine the relative changes in the levels of area production and yield of the selected food crops of eastern Uttar Pradesh region as a whole. The nine crops are: rice, wheat, bajra, barley, jowar, gram peas, arahar and sugarcane. The area, production and yield data for years from 1980-81 to 2000-2001 have been obtained from various issues of statistical abstract, agricultural data, Lucknow, Uttar Pradesh, district gazetteers and from official records of the Directorate of statistical and agricultural bhawan government of Uttar Pradesh, Lucknow.

The distribution of individual crops of area, production and yield and the growth rates are given in tables 3.3 for three points of time i.e. 1980-81, 1990-91 and 2000-2001. The decadal growth rates from 1980-81 to 2000-2001 of area, production and yield of individual crops are also given in table 3.3. An attempt has been made here to explain the changes in growth rate of area, production and yield of each crop during three points of time.

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## RICE

Rice is a predominant Kharif crop in India. It grows well in low-lying areas of heavy clays or heaviest loams or clayey loamy soils. It is an aquatic plant, and flourishes well in clayey soils-where water can be kept static to keep its feet wet. Rice is one of the most important and leading crop grown in Eastern Uttar Pradesh. It is a staple food of the people of Eastern Uttar Pradesh. Due to its high requirement of water, it is best grown in areas where irrigation is possible. Looking at the amount of labour required to grow this crop, most of the people of the Eastern Uttar Pradesh have shifted to raising of other crops which require less labour and provide higher income.

From the Table 3.3, it may be seen that the area under this cultivation occupied 2696 thousand hectares of the eastern Uttar Pradesh during 1980-81, 2947 thousand hectares in 1990-91 and 3182 thousand hectares in 2000-01. The area under its cultivation increased by 251 thousand hectares in 1990-91 and in the next period, the area again increased by 235 thousand hectares in 2000-01. The area under rice cultivation has increased from 2696 thousand hectares in 1980-81 to 3182 thousand hectares in 2000-01 i.e. by 486 thousand hectares.

The production of rice was 1095 thousand metric tones in 1980-81, 4481 thousand tones in 1990-91 and 7106 thousand metric tones in 2000-01 which shows continuous progress of change by 3387 thousand metric tones in 1990-91 and it again increased by 2624 thousand metric tones in 2000-01 and in this way the total change may be seen from the table 3.3 i.e. 406 Kg. per hectare in 1980-81, 1521 Kg. per hectare in 1990-91 and 2234 Kg. per hectare in 2000-01.

From the table 3.3, it may be seen that the decadal growth rate of area under rice cultivation was 1.80% from 1980 to 2000. The decadal growth production was 5.86% in 1990 to 2000 but the aggregate decadal growth of rice production from 1980 to 2000 was 54.90% which shows progressive change from 1980 to 2000 but tremendous progress has seen in 1980 to 1990 due to may be regular monsoon, tube wells facilities, high variety of yielding seeds, using modern technology, irrigation facilities, using good quality of fertilizers, area transformation, pesticides etc..

## WHEAT

Wheat is the most important cereal crop and grown during the winter season. It requires the cool climate and moderate rainfall. It is mostly raised during the Rabi season when temperatures are 10-15° C and the rainfall 5-15 cm. light drizzles and cloudiness when grain is ripening seems to increase productivity.

From the table 3.3, it may be seen that, the area under this crop was 2353 thousand hectares in 1980, 2990 thousand hectares in 1990-91 and 3182 thousand hectares in 2000 in the eastern Uttar Pradesh as a whole which shows continuous increase in area by 637 thousand hectares in 1980 to 1990 and 192 thousand hectares in 1990 to 2000.

The production of wheat was 2787 thousand metric tones in 1980-81, 6049 thousand metric tones in 1990-91 and 8344 thousand metric tones in 2000-01 which shows a continuous progress in production by 3262 thousand metric tones in 1990-91 and by 2295 thousand metric tones in 2000. From the above it may be easily seen that a tremendous increase has been made in 1980-81 to 1990-91 due to well developments

of tube wells, using modern technology, high variety of yielding seeds, fertilizers, pesticides etc.

From the table 3.4, it may be seen that the decadal growth rate of area under wheat from 1980 to 2000 was 4.60% and the decadal growth rate of production of wheat was 19.94% from 1980 to 2000. From this data it may be said that all due to high yielding rate, regular monsoon, high mechanization, high variety of yielding seeds, using modern technology, using good quality of fertilizers etc.

## BAJRA

From the table 3.3, it may be seen that the area under cultivation of Bajra was 147 thousand hectares in 1980-81, 134 thousand hectares in 1990-91 and 113 thousand hectares in 2000 which shows decreasing trend by 3 thousand hectares in 1980 to 1990 and by 21 thousand hectares in 1990 to 2000.

The production of Bajra was 48 thousand metric tones in 1980, 118 thousand metric tones in 1990 and 129 thousand metric tones in 2000 which shows an increasing trend by 70 thousand metric tones in 1980 to 1990 and by 11 thousand metric tones in 1990 to 2000.

From the table 3.3, it may be clearly seen that the decadal growth rate of area under Bajra has decreased by 2.35% in 1980 to 2000 while the production was increased by 16.71% in 1980 to 2000.

From the above, it may be observed that a contrast situation has found here that the area was decreased due to area has transformed to other crops and the production was increased due to regular monsoon, using modern technology, using good quality of fertilizers etc.



## BARLEY

From the table 3.3, it may be seen that the area under cultivation of barley was 273 thousand hectares in 1980, 139 thousand hectares in 1990-91 and 92 thousand hectares in 2000-01 which shows decreasing trend by 44 thousand hectares in 1980 to 1990 and by 47 thousand hectares in 1990 to 2000.

The production of barley was 268 thousand metric tones in 1980-81, 173 thousand metric tones in 1990-91 and 144 thousand metric tones in 2000-01 which shows decreasing trend by 95 thousand tones in 1980-81 to 1990-91 and by 29 thousand metric tones in 1990 to 2000.

From the table 3.3, it may be clearly seen that the decadal growth rate of area under barley has decreased by 6.62% in 1980 to 2000 and the production was also decreased by 4.61% in 1980-81 to 2000-01

From the above, it has been observe that the area and production both has decreased due to area transformed to other crops, irregular monsoon, less demands of the product etc.

## JOWAR

From the table 3.3, it may be seen that the area under cultivation of Jowar was 85 thousand hectares in 1980-81, 83 thousand hectares in 1990-91 and 92 thousand hectares in 2000-01 which shows decreasing and increasing trend from 1980 to 2000. It has decreased by 2 thousand hectares in 1980-81 to 1990-91 and increased by 9 thousand hectares in 1990-91 to 2000-01.

The production of Jowar was 33 thousand metric tones in 1980-81, 83 thousand tones in 1990-91 and 92 thousand metric tones in 2000-01

which shows an increasing trend by 50 thousand metric tones in 1980-81 to 1990-91 and by 11 thousand metric tones in 1990 to 2000.

From the table 3.3, it may be clearly seen that the decadal growth rate of area under Jawar has increased by .83% in 1980 to 2000 and the production was also increased by 13.79% in 1980-81 to 2000-01, all these due to high yielding rate, area transformation, suitable climatic conditions, using modern technology, high yielding rate etc.

## ARAHAR

Among pulses arahar is an important kharif crop. Pulses are the main source of protein and therefore, in the light of their decreasing trend of area, production requires serious attention of the farmers and governmental agencies.

From the table 3.3, it may be seen that the area under cultivation of arahar was 175 thousand hectares in 1980-81, 210 thousand hectares in 1990-91 and 190 thousand hectares in 2000-01 which shows variations and increased by 35 thousand hectares in 1980-81 to 1990-91 but decreased by 20 thousand hectares in 1990-91 to 2000-01 but the total change has recorded increased by 15 thousand hectares from 1980-81 to 2000-01.

The production of arahar was 251 thousand metric tones in 1980-81, 270 thousand metric tones in 1990-91 and 257 thousand metric tones in 2000-01, which shows variations in different points of time and increased by 19 thousand metric tones in 1980-81 to 1990-91 and decreased by 13 thousand metric tones in 1990 to 2000.

From the table 3.3, it may be clearly seen that the decadal growth rate of area under arahar has increased by .23% in 1980 to 2000 while the production was decreased by .56% in 1980 to 2000. Here a contrast

situation has found that the area has increased and the production has decreased. The area has increased due to area transformation from other crops, people's demand of this crop. The production has decreased due to low yielding rate, irregular monsoon, unavailability of irrigation facilities etc.

## GRAM

It is a principal pulse of Rabi season grown mainly for cash returns. It is the most important Rabi crop among the pulses. It requires a mild cool weather and a low to moderate rainfall of 38-51 cms. It is cultivated as pure or mixed with wheat or mustard.

From the table 3.3, it may be seen that the area under cultivation of gram was 398 thousand hectares in 1980-81, 343 thousand hectares in 1990-91 and 244 thousand hectares in 2000-01, which shows decreasing trend by 55 thousand hectares in 1980-81 to 1990-91 and by 99 thousand hectares in 1990-91 to 2000-01.

The production of gram was 241 thousand metric tones in 1980-81, 334 thousand metric tones in 1990-91 and 221 thousand metric tones in 2000-01 which shows an increasing trend by 93 thousand metric tones in 1980-81 to 1990-91 but it declined by 113 thousand metric tones in 1990-91 to 2000-01.

From the table 3.3, it may be clearly seen that the decadal average growth rate of area under gram has negative growth of -3.87% in 1980 to 2000 and the production was also declined by 0.84% in 1980 to 2000.

From the above, it has seen that the area and production both has decreased due to low yielding rate, area transformed to other crops, irregular monsoon etc.

## PEAS

From the table 3.3, it may be seen that the area under cultivation of peas was 120 thousand hectares in 1980-81, 103 thousand hectares in 1990-91 and 119 thousand hectares in 2000-01 which shows changing trend by decreasing of 17 thousand hectares in 1980 to 1990 but increased by 16 thousand hectares in 1990 to 2000. The production of peas was 47 thousand metric tones in 1980-81, 100 thousand metric tones in 1990-91 and 132 thousand hectares in 2000-01 which shows an increasing trend by 53 thousand metric tones in 1980 to 1990 and by 32 thousand metric tones in 1990 to 2000.

From the table 3.3, it may be clearly seen that the decadal average growth rate of area under peas has decreased by 0.04% in 1980 to 2000 while the production was increased by 17.93% in 1980 to 2000. Here a contrast situation has found that the area has decreased and the production has increased. The area has decreased due to area transformation to other crops, low yielding rate. The production has increased due to regular monsoon, availability of irrigation facilities using good quality of seeds, using of fertilizers etc.

## SUGARCANE

Sugarcane is an important crop among the cash crop of the study area. It is therefore, said that Uttar Pradesh is sugar bowl of India

From the table 3.3, it may be seen that the area under cultivation of sugarcane was 286 thousand hectares in 1980-81, 312 thousand hectares in 1990-91 and 344 thousand hectares in 2000-01 which shows increasing trend by 26 thousand hectares in 1980 to 1990 and by 32 thousand hectares in 1990 to 2000.

The production of sugarcane was 9663 thousand metric tones in 1980-81. 13837 thousand metric tones in 1990-91 and 17208 thousand hectares in 2000-01 which shows a tremendous increase in three periods of time and increased by 4174 thousand metric tones in 1980 to 1990 and by 3371 thousand metric tones in 1990 to 2000.

From the table 3.3, it may be clearly seen that the decadal growth rate of area and production under sugarcane has increased by 2.02% in 1980 to 2000 while the production was increased by 20.6% in 1980 to 2000.

From the above, it has been clearly observe that the area and production both has increased due to area transformed from other crops, regular monsoon, using modem technology, using high variety of yielding seeds, demands of the products, using good quality of fertilizers, high yielding rate etc.

### **III-6 CHANGING PATTERN OF CEREALS, PULSES AND CASH CROP IN EASTERN UTTAR PRADESH**

#### **III-6a CEREALS**

Cereals are the most important and predominant crop among all the crops of the eastern Uttar Pradesh. Table 3.4 shows the relative levels of area, production and yield under cereals from 1980 to 2000. The area under cereals for the study area as a whole was 5583 thousand hectares in 1980-81, 6295 thousand hectares in 1990-91 and 6916 thousand hectares in 2000-01 which shows the constant increasing trend of change by 712 thousand hectares in 1980 to 1990 and by 621 thousand hectares in 1990

to 2000 and thus the total change from 1980 to 2000 may be seen from the table 3.4 was 1333 thousand hectares under cereals due to high Yielding rate, land transformation from other crops, demands of the product etc.

During the same periods of time, the eastern Uttar Pradesh produced cereals 4232 thousand metric tones in 1980-81. 10912 thousand metric tones in 1990-91 and 15804 thousand metric tones in 2000-01 which shows constant increasing trend of change by 6680 thousand metric tones in 1980 to 1990 and it again increased by 4892 thousand metric tones in 1990 to 2000, thus the total change may be seen from 1980 to 2000 was 11672 thousand metric tones.

From the above, it may be analyzed that all these progress were due to regular monsoon, suitable irrigation facilities, high yielding rate, using good quality of seeds, using good quality of fertilizers, modern technology, insecticides, pesticides etc.

### III-6b PULSES

Pulses are the main source of protein and therefore, in the light of their decreasing trend of area, production requires serious attention of the farmers and governmental agencies. It can be achieved through the adoption of new varieties of seeds and by safeguarding the interests of the farmers.

Table 3.4 shows the relative levels of area, production and yield under pulses from 1980 to 2000. The area under pulses for the study area as a whole was 694 thousand hectares in 1980-81. 658 thousand hectares in 1990-91

and 554 thousand hectares in 2000-01 which shows the constant decreasing

trend of change by 36 thousand hectares in 1980-81 to 1990-91 and by 104 thousand hectares in 1990-91 to 2000-01 and thus the total change from 1980-81 to 2000-01 may be seen from the table 3.5 was decreased by 140 thousand hectares under pulses due to low yielding rate, land transformation to other crops, etc.

During the same periods of time, the eastern Uttar Pradesh produced pulses 540 thousand tones in 1980-81. 705 thousand metric tones in 1990-91 and 611 thousand metric tones in 2000-01 which shows increasing and decreasing trend of change. It was increased by 165 thousand metric tones in 1980 to 1990 but it decreased by 94 thousand metric tones in 1990 to 2000. In the first duration of time, the production was increased may be due to regular monsoon, suitable irrigation facilities, high yielding rate, using good quality of seeds, using good quality of fertilizers, modern technology, insecticides, pesticides etc. but in the second duration of time, it has decreased may be due to irregular monsoon, land transformation to other crops due to low yielding rate, using simple seeds, unsuitable irrigation facilities etc.

## ni-6c CASH CROP

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From the table 3.4, it may be seen that the relative level of production and yield under cash crop from 1980 to 2000. The area under cash crop for the study area as a whole was 286 thousand hectares in 1980-81, 312 thousand hectares in 1990-91 and 344 thousand hectares in

be seen from the table 3.4 was 58 thousand hectares under cash crop due to high yielding rate, land transformation from other crops, demands of the product etc.

During the same periods of time, the eastern Uttar Pradesh produced cash crop 9663 thousand metric tones in 1980-81, 13837 thousand metric tones in 1990-91 and 17208 thousand metric tones in 2000-01 which shows constant increasing trend of change by 4174 thousand metric tones in 1980 to 1990 and it again increased by 3371 thousand metric tones in 1990 to 2000, thus the total change of increase may be seen from 1980 to 2000 was 7545 thousand metric tones.





From the table 3.4, it may be very easily understand that the area and production of cash crop in eastern Uttar Pradesh has grown at very fast rate through the yield which was 337.11 Kg. per hectare in 1980-81, 443 45 Kg. per hectare in 1990-91 and 499.44 Kg. per hectare in 2000-01.

From the above, it may be analyzed that all these progress under the cash crop were due to regular monsoon, suitable irrigation facilities, high yielding rate, using good quality of seeds, using good quality of fertilizers, modern technology, insecticides, pesticides etc.

From the above, it may be analyzed that the area, production and yield under cereals has increased may be due to high yielding rate, land transformation from other crops, regular monsoon, suitable irrigation facilities, using good quality of seeds, using good quality of fertilizers, modern technology, insecticides, pesticides etc. while the area, production under the pulses crop has decreased may be due to low yielding rate, land transformation to other crops and farmers shifting to cereals due to high yielding rate. But in the case of cash crop, the area, production and yield under cash crop has increased may be due to providing fit-ee seeds of different breeds at the time of sowing and by providing much more financial support to the farmers by the government, high yielding rate, land transformation from other crops, regular monsoon, suitable irrigation facilities, using good quality of seeds, using good quality of fertilizers, modern technology, insecticides etc.

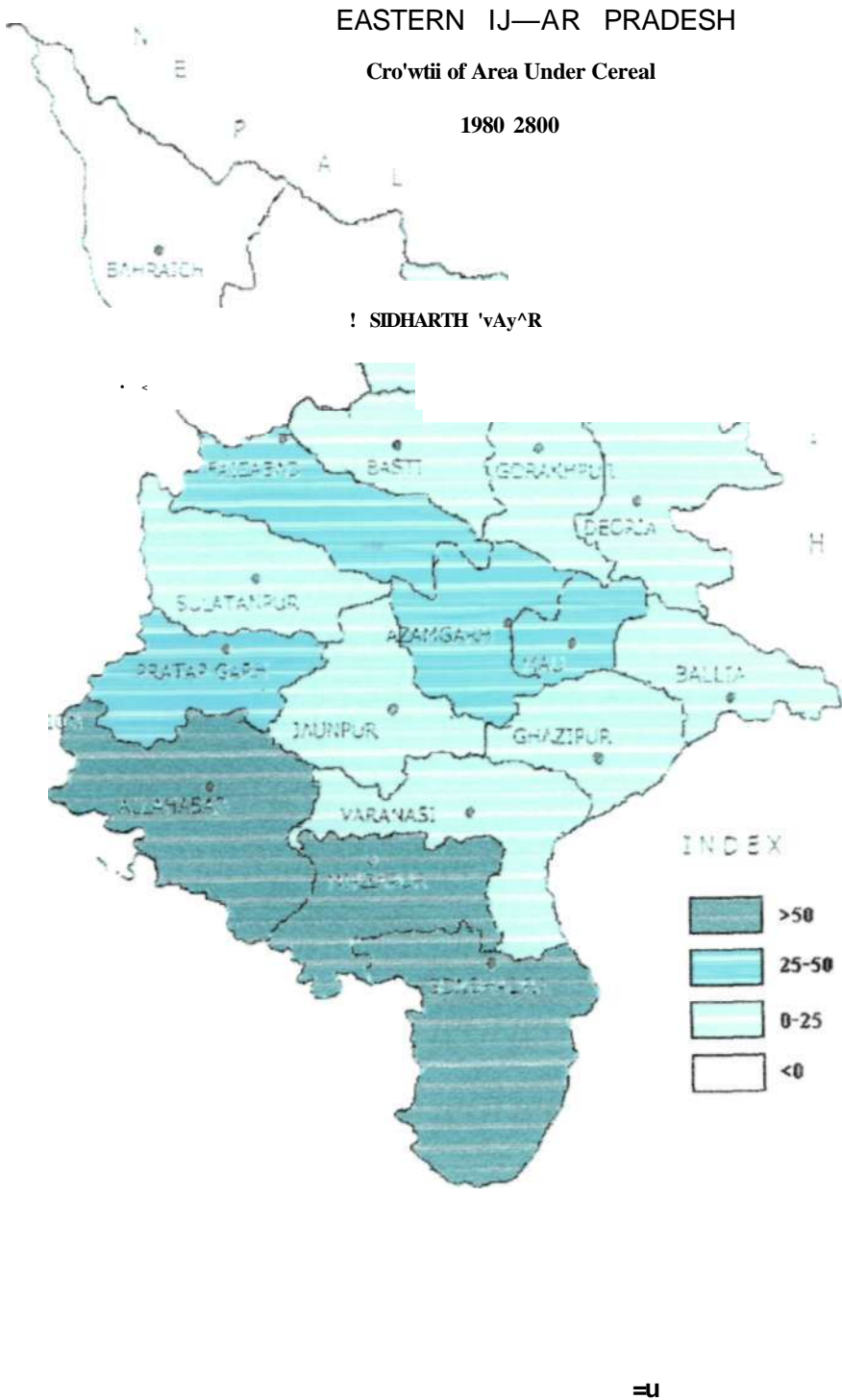
#### **111-7 DISTRICT WISE DISTRIBUTION OF CEREALS IN EASTERN UTTAR PRADESH DURING 1980 to 2000**

Cereals are the most important and predominant crop among all the crops of the eastern Uttar Pradesh. District wise distribution of cereals in eastern Uttar Pradesh has shown in table 3.5.

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Source: National Atlas & Thematic Mapping Organisation, Calcutta

FIG 3.1 (a)

Table 3.5

District wise growth rates (in %) of area, production and yield of cereals in eastern Uttar Pradesh diirinu 1980-2000

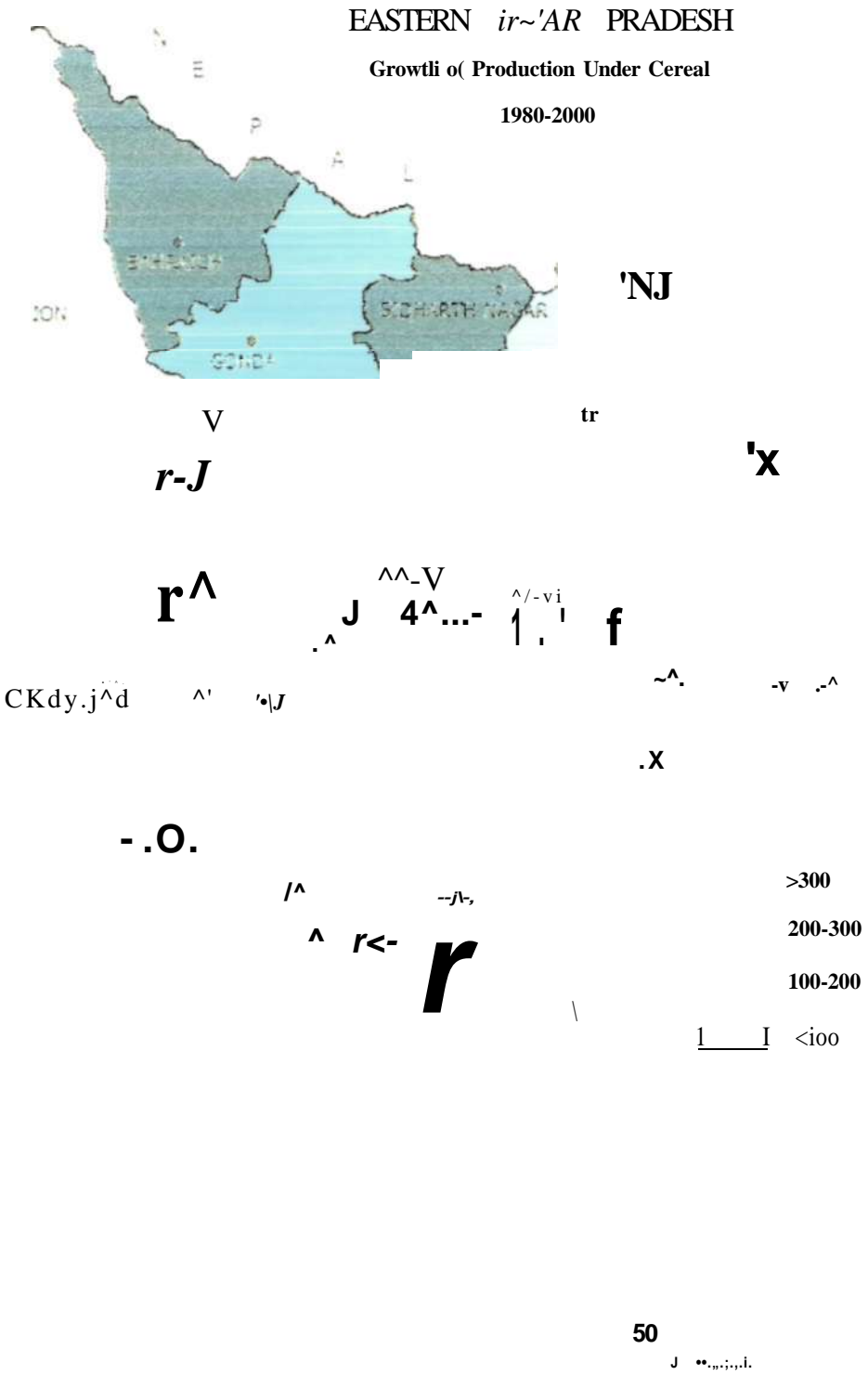
District	Area	Production	Yield
Allahabad	90.92	628.46	281.12
Azamgarh (Mau)	34.33	318.00	211.32
Baliraich	-2.72	300.33	311.73
Ballia	16.03	200.04	158.76
Basti (S.Nagar)	18.62	372.15	298.07
Deoria	3.41	106.08	99.29
Faizabad	30.88	227.63	150.43
Ghazipur	24.32	358.32	268.17
Gonda	-54.45	290.32	757.63
Gorakhpur(Maharajganj)	13.49	186.25	152.14
Jaunpur	24.03	176.74	123.40
Mirzapur( Sonbhadra)	94.33	89.71	413.50
Pratapgarh	31.72	228.20	149.28
Sultanpur	9.57	295.47	260.99
Varanasi	10.33	300.53	262.94

From the table 3.5, the district level analysis shows that in most of the district of the study area, the growth rates under the cereals have increased. Only two districts i.e. Gonda and Bahraich have negative growth rate in area under cereals. The reason behind it may be due to the area has transformed to sugarcane because of the development of sugar mills and demands of the product and high yielding rate and more profitable to the farmers. The farmer's intention shifted from cereals crop

to the sugarcane because of the sugar irriils and direct cash returns. In the Other districts also, the growth rate of area under cereal crop showed a positive change which range between 3.41"o in Deona to Mirzapur 94.33% which may be seen from the table 3.5. The district of Mnzapur. Allahabad, Azamgarh, Pratapgarh, Faizabad of the study area recorded the good growth more than 25% in area under cereal crops. The other district also have more than or nearly equal to 10% growth of area under cereal except Deoria. Deoria has growth rate o( area under cereal was 3.41% and it may be due to the area transformation from cereal crops to the other crops like sugarcane because of demand of this product due to the development of sugar mill day by day. Besides all these, when we try to analyze minutely about the area under different cereal crops then we find that the growth of area is found in wheat and rice crop while the area of other cereal crops either remained stagnant or presented a negative growth rates. Wheat and rice is the most important crop of eastern Uttar Pradesh than the other crops of cereal, it may be due to the high yieldmg rates in comparison of the other crops. The high yieldmg variety programmer is an important and major factor for diversification in cropping pattern and its introduction has proved a big success in rice and wheat cultivation. The high yielding giving nature of seeds also needs sufficient amount of water. Therefore, the increase in area under wheat and rice is largely controlled by the availability of water either by natural resources as rains or by canal and tube well irrigations and due to high yield giving nature of seeds of wheat and rice, all possible area has been brought under wheat and rice cultivation.

As regards the production, there was considerable increase in the production of cereal in all the district of the study area. The positive growth rates of production has been recorded during the given periods of time in all the district but this increase was not uniform in all the

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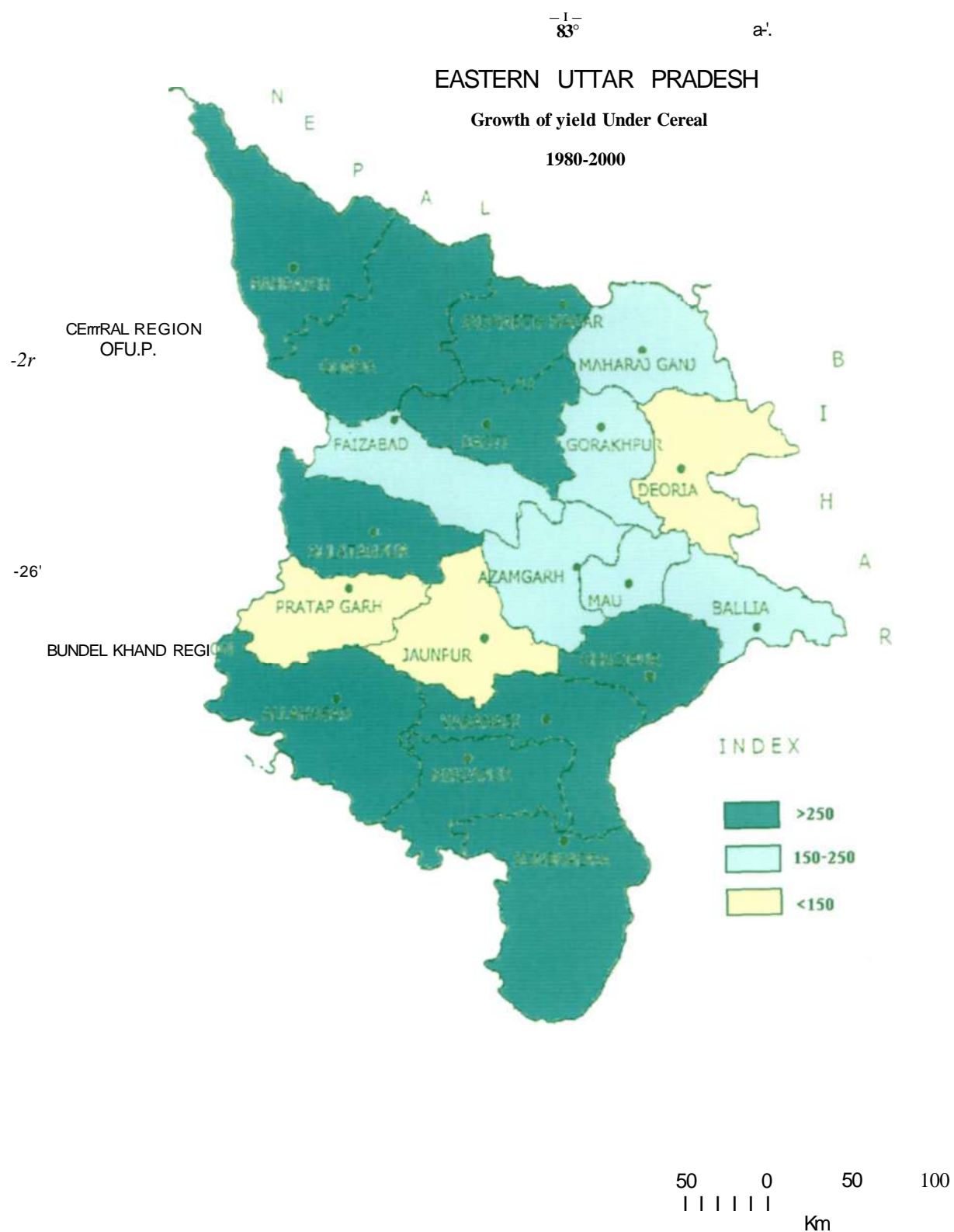
Sou;-ce: National Alias & Thematic Mapping Organization, Calcuna

FIG 3.1 (b)

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districts and it varies from 106.08% in Deoria to 899.71% in Mirzapur. This increase in production has been made in may be due to the area transformation from other crops and using modern technology, tube well facilities, using good quality of fertilizers. Mirzapur recorded the maximum growth in production and it is may be due to maximum growth in area i.e. 899.71%. From the table 3.5, it may be seen that the other district namely, Allahabad, Basti, Azamgarh, Ghazipur, Varanasi, Gonda, SuUanpuv have also recorded the high growth rate of production. All these districts recorded growth rate of production more than 250% during the taken period in the study area. In the same way, the remaining other districts have also good growth rates of production except Deoria. However, when we tr\ to analyze about the production then again we find that the tremendous increase found in wheat and rice. The other cereal crops have also shovvn growth rate in production but negative growth rate in comparison of rice and wheat in most of the districts of the eastern Uttar Pradesh. Since the production is closely related to the area and as these crops generally have constant or negative growth in area, they also have negative growth rate in production. The increase in production of wheat and rice and decrease in production of other cereal crops are the contribution of modern agricultural technology, high yielding variety of seeds, using good quality of fertilizers, regular monsoon, well inigation facilities, insecticides, pesticides etc. Most of the area of millets, Jowar. and barley is now transformed for the cultivation of rice and wheat due to the better prospects and high yielding rate.

From the Table 3,5, it may be clearly seen that the yield of cereals recorded positive growth rate in entire study area. The districts of Gonda. Mirzapur, Varanasi, Ghazipur, Allahabad, Bahraich, Sultanpur and Basti are eight districts which recorded more than 250% growth rate of yield under the cereals. In other districts, the groulh rate of yield have recorded



Source: National Atlas & Thematic Mapping Organization, Calcutta

FIG 3.1 (c)



more than 150% and there are three other districts namely, Pratapgarh, Deoria and Jaunpur recorded the growth rate of yield less than 150%. As the yield of different cereal crops concerned, there were generally positive growth rates for all crops except millets where recorded negative growth rate in some districts of the study area. But it is observed that the yield of millets, barley and Jowar grew more or less uniformly over the entire period, while the yield of wheat and rice increased at higher rates. The high yield in wheat and rice in these districts are mainly due to the availability of irrigation facilities to meet the standard requirement of water for these crops. The variations in the growth rates of yield in different districts is due to less development in irrigation facilities, floods and famines problems in some districts.

### **III-8 DISTRICT WISE DISTRIBUTION OF PULSES IN EASTERN UTTAR PRADESH DURING 1980 to 2000**

Pulses are the main source of protein and therefore, in the light of their decreasing trend of area, production and yield requires serious attention of the farmers and governmental agencies. It can be achieved through the adoption of new varieties of seeds and by safeguarding the interests of the farmers. District wise distribution of pulses in eastern Uttar Pradesh has shown in table 3.6.

**Table 3.6**

District wise growth rates (in %) of area, production and yield of pulses in eastern Uttar Pradesh during 1980-2000

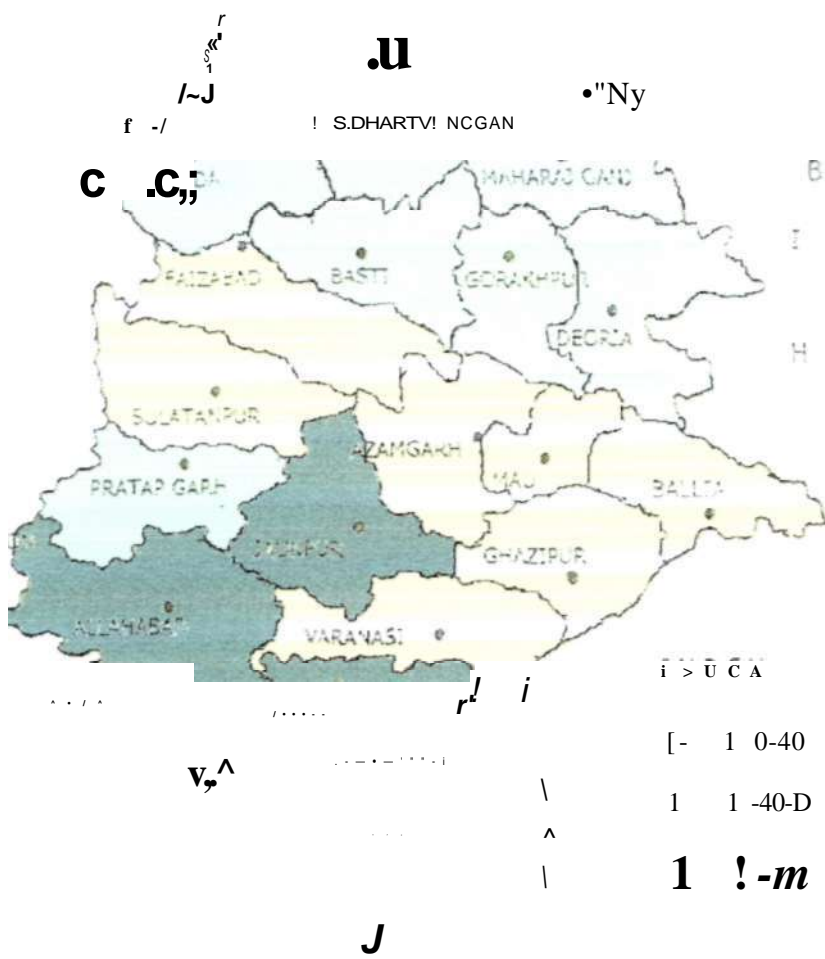
<b>District</b>	<b>Area</b>	<b>Production</b>	<b>Yield</b>
Allahabad	36.43	78.97	31.16
Azamgarh	-42.51	-19.94	39.42

EASTERN U^AR PRADESH

Growdi of Area Under Pulses

1980-2000

G-U.P.



Sou:-ce: Nau:)naL Alias &. Thematic Mapping Organiziitioa, Calcuna

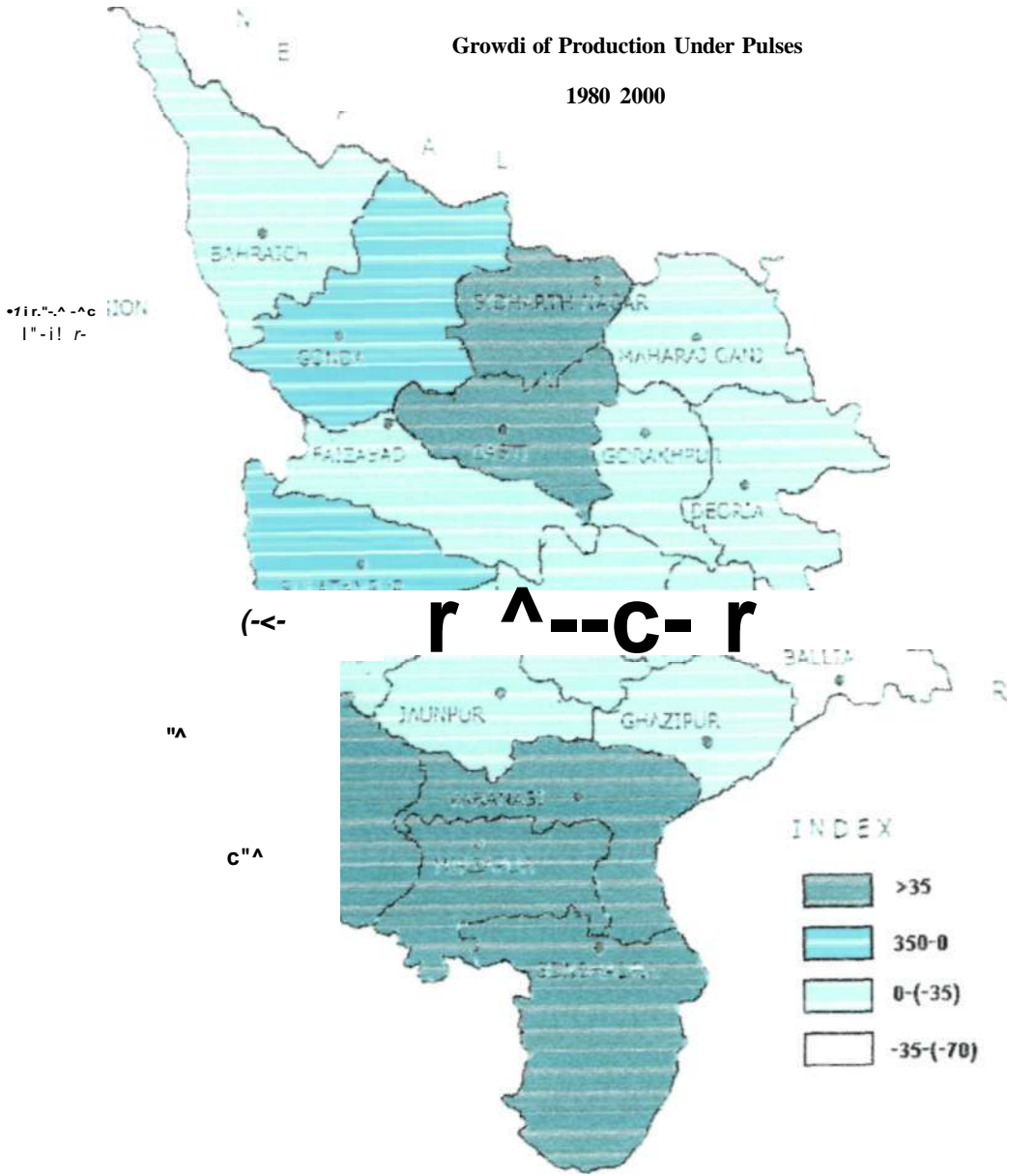
Bahraich	38.78	-20.88	29.16	
Ballia	-59.09	-67.48	-20.52	
Basti	-25.15	210.66	314.90	
Deoria	-30.68	-11.29	27.81	!
Faizabad	-46.68	-8.95	70.86	i
Ghazipur	-44.73	-21.48	42.11	
Gonad	-6.70	4.73	12.27	
Gorakhpur	-39.64	-15.22	40.46	
Jaunpur	0.002	-30.35	-13.68	
Mirzapur	35.60	159.07	91.05	
Pratapgarh	-37.68	-29.58	12.86	
Sultanpur	-45.80	19.43	120.31	
Varanasi	-66.13	45.48	63.89	

From the table 3.6, it has been observed that the growth rates in area, production and yield of pulses showed a negative growth in the study area. The district level analysis shows that pulses recorded negative growth rates in area, production and yield in many districts of the study area.

As regard as the growth rates of area under pulses is concerned, it may be seen from table 3.6 that 12 districts namely, Varansi ,Ghazipur, Ballia. Gorakhpur, Deoria, Basti, Azamgarh, Faizabad, Gonda, Bahraich, Sultanpur and Pratapgarh have showed negative growth rate while Mirzapur, Allahabad have high positive growth rates of area and only Jaunpur has also positive growth rates of area (0.002%) under pulses.

As far as, the matter of growth rates of production under pulses is concerned, it has find that in general, most of the districts which have negative growth in area also have negative growth in production except

Ur



Source: National Atlas & Thematic Mapping Organization, Calcutta

FIG 32 (b)

few districts. From the table, it may be seen that Jaunpur which has a very slow growth rates of area (0.002%) under this head showed a negative growth rates in production, it may be due to iuegular monsoon, low yielding rate, area transformation to other crops, less demands of the products etc. In the same way, the districts like Varansi, Sultanpur, Gonda, and Basti, w hich has recorded a negative growth rates of area but due to high positive growth rates of yield in pulses, these districts have presented positive growth in production. From the table 3.6, it may be clearly seen that there are nine districts which have recorded negative growth rates of production under pulses in the study area. The remainmg other districts recorded positive growth rates under pulses. Mirzapur district has high growth rate of production due to high yielding growth rates. Wliile Allahabad showed a high growth rates of area but slow positive growth in production due to less yielding rate.

From the table 3.6, it may be seen that there is some improvement in yield rates of pulses in the whole study area. Only two districts i.e. Jaunpur and Ballia showed the negative growth rates in the yield rate of pulses. The remaining other districts showed a positive growth rate of yield under pulses. There are two districts namely, Basti and Sultanpur which ha\ e high growth rate of having more than 100%. There are three other districts which have recorded the grovvth rate oi yield having more than 50"0. There are other districts namely, Ghazipur, Allahabad. Gorakhpur, Deoria, Azamgarh, Gonda, Bahraich and Prarapiiarli shGv\cd a \ery slow positive growth rates in yield of pulses.

Wlien we tr>' to analyze the growth rates of cereals and pulses (food grains;., it has found that introduction of modern agricultural technology played an important role and boosted up ti,c pr.>daCuorr oi ccroais iTiaiiiiii} wlicai and rice. The area under pulses not only decreased but yield and production has also decreased in finan} diSuicrs of d^: -;ud\

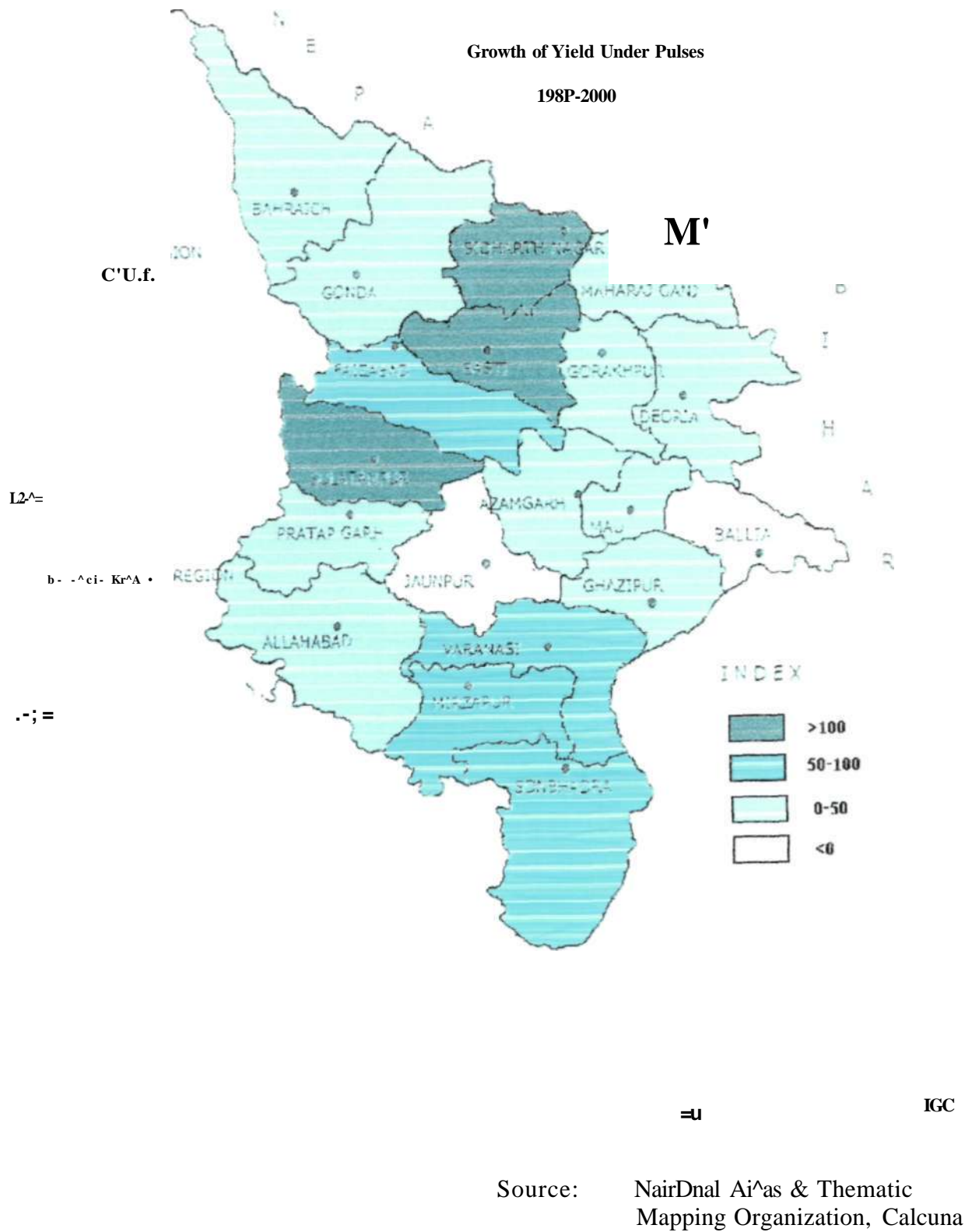


FIG 3.2(c)

area. The modern agricultural technology has raised the yield rate of wheat and rice and due to low yield rate of pulses, the farmers prefer to cultivate the crops of cereals mainly rice and wheat instead of pulses even in fertile lands with all yield raising inputs and improved cultural practices. The farmers therefore continue to grow pulses on poor marginal lands under rainfed conditions with generally no inputs like fertilizers, pesticides etc. moreover, the pulses are more susceptible to pests and diseases and adverse effects of weather conditions like snowfalls, hails etc. as compare to cereals and other crops. Therefore, the farmers feel better prospects in cultivating the cereals in comparison of cultivating the pulses crops.

### **III-9 DEVELOPMENT OF AGRICULTURE IN EASTERN UTTAR PRADESH 2000-01**

#### **III-9a CEREALS PRODUCTIVITY VARIATIONS**

In Eastern Uttar Pradesh cereals occupy a major and highly significant position because of the absence of pulses crops, as pulses occupy 6 percent of the gross cropped area while cereals occupy nearly 80 percent. The district wise variations of cereals is more or less of the same characteristics of food grains because of the lesser percentage share of pulses and ver>' low per hectare productivity, while the share of the total pulses in the food crops is 6.9 percent and cereals 93.01 percent. It shows the share of the pulses in food grains is negligible.

Because of the higher rate of irrigation in Eastern Uttar Pradesh the pulses area ^vas shifted to either wheat or rice crops. Pulses crisis in Eastern Uttar Pradesh is ver>' serious and unless a high >ielding \anot> (HY\0 is not introduced, the situation ma^ not be tackled properly with vital source of protein among the under age population of the region A

separate plan to tackle the situation is needed keeping in view the ecology and economic value of other crops.

**III-9b PULSES PRODUCTIVITY REGION**

In the Eastern Uttar Pradesh pulses are the most neglected crop because of the much lower productivity as compared to the wheat and rice. For instance wheat and rice productivity is ranging between 2000 kg per hectare to 2900 kg per hectare while pulses productivity is ranging between 700 kg per hectare to 2000 kg per hectare. A decline in this crop is also recorded because of the substitute available for consumption is much cheaper such as leafy vegetables and potatoes. Pulses in the Eastern Uttar Pradesh is occupying is about 6.97 percent of the total food crops area and contributing about 3.72 percent of the total food grains production.

**ni-9c CROPWISE REGIONAL CHARACTERISTICS**

Cropping pattern in the Eastern Uttar Pradesh is dominated by wheat and rice as they occupied more than 6568019 hectares out of 8692744 of Gross cultivated area. Other crops such as sugarcane, gram,

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occupying less than one lakli hectares each.







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## **ni-9d WHEAT PRODUCTION. PRODUCTIVITY AND REGIONAL VARIATIONS**

Wheat is the most significant food grains crop in the region because it is the staple diet of the people in the region. During 1980's due to the increase in area as well as the production, its share has increased in almost all the districts of Eastern Uttar Pradesh. It is being harvested in all the districts of Eastern Uttar Pradesh.

It occupies about 39.52 percent of the Gross cultivated area of the studied region. Regional variations in wheat productivity is very high. North Eastern districts of the studied region i.e. Maharajganj, Siddhartha nagar and St. Kabimagar with productivity more than 2800 kg per hectare the productivity of wheat is very low in the southern part of the studied region i.e. Sonbhadra and Mirzapur with productivity less than 2200 kg per hectare. The observation shows a decreasing trend in the productivity from north towards the south. The productivity of wheat is non-traditional pockets are very high because of the application of high level of inputs such as HYV, fertilizers, irrigation modern implements of agriculture and pesticides. Variation in productivity is ranging between 2200 kg per hectare to more than 2800 kg per hectare. About 4.96 percent area is under low level of productivity contributing about 3.72 percent in the total production. About 10.05 percent area is identified under high level productivity contributing about 11.6 percent in the total production.

## **III-9e RICE PRODUCTION, PRODUCTIVITY AND REGIONAL VARIATIONS**

Rice is a second dominant crop next to wheat in terms of area in the study region as it occupies 3131779 hectares and producing about 7006833 metric tonnes.

It occupies about 36.02 percent of the Gross cultivated area of the region while the wheat is being grown in 39.52 percent of the Gross cropped area. As compared to rice wheat is higher remunerative crop. It is obvious from the table .

Wheat , rice production and productivity level that rice is contributing only 7006833 metric tones and the wheat is contributing 8596383 metric tonnes in the total production while the area under this crop have little variation. It is the basic fact that rice bed was encouraged more than the wheat .The basic ingredients of the green revolution is available for the wheat which is not properly implemented in the Eastern Uttar Pradesh in the beginning; ultimately higher yield would not be achieved as per the wheat.

The case of rice productivity has not shown any regular trend in the study region. The high concentration of rice productivity is recorded in the certain pockets due to the assured supply of irrigation and adequate amount of fertilizers and high yielding variety HYV of seeds. The highest productivity of rice has been recorded in the districts of Chandauli and Ambedkar nagar i.e. More than 2800 kg per hectare and the lowest productivity of rice has been recorded in the districts of Ballia, Gorakhpur, Bhojpur and Fatehpur i.e. Less than 2000 kg per hectare.

The Eastern Uttar Pradesh as a whole is divided into six major regions on the basis of productivity per hectare that is very low medium, high and very high. The contribution of each level of development is analysed in terms of percentage share of area and production to measure the development possibilities in future very high productivity region occupy 6.87 percent of the total rice cropped area , which produced about 8.79 percent of the total rice production in the region while 18.93 percent of the total rice cropped area comes under the low productivity region

that is less than 2000 kg per hectare and produced about 16.7 percent of the total production of rice. It shows large portions of the study region have very low and low productivity because of little attention is given towards the rice productivity of the region in comparison to the wheat.

### **III-9f OTHER CROPS**

The crops such as sugarcane, grams, peas, arahar, jowar, bajra, barley are occupying about not more than 24 percent of the gross cultivated area of the study region. The detailed analysis of these crops has been mentioned in the tables against these crops. These crops are characterized as extinctions crops with some exception because of their percentage share and low productivity as compared to wheat and rice.

These crops are facing the problems of extinction because of the availability of HYV seeds irrigation and fertilizers in major crops.

### **111-10 CROPPING INTENSITY**

One of the methods of increasing the total quantum of food production is the expansion but is not possible after a certain limit. Thus the alternative available for increasing food production is intensification or increasing the intensity of cropping. Cropping intensity refers to the number of crops grown in an area during a particular year. It is the extent to which the net sown area is redropped or resown (singh 1997). The pattern of crop intensification reveals the variation in cultivation of a crop in a given region and at a specific point of time. Cropping intensity is the magnitude of gross cropped area to its net cropped area. The total cropped area (gross sown area) as the percentage of net sown area gives an ideal index to ascertain intensity of cropping, and it is a measure of agricultural efficiency (Singh 1997). Therefore, cropping intensity

implies the number of crops raised on an arable area during the agricultural year. For example if one crop is grown, a field in year the index of intensity of cropping is assume to be 100%, meaning thereby a mono- culture cropping if two crops are grown in a year then index will be 200% denoting as double crop, and if, three crops a year are cultivated it is considered a multiple cropping. Therefore the higher the cropping index value, the higher the agricultural land use efficiency and consequently lower the percentage of fallow land. The cropping intensity helps to understand the reflection of the state of functional reality of crop production. Cropping intensity reflecting the existing level of cropped distribution indicates also the magnitude, direction and the availability of net area for cultivation. Therefore the concept of cropping intensity has been considered as a functional determinant of agriculture in the study area. For the determination of cropping intensity, a number of statistical techniques have been evolved and used by a number of scholars working in this field. A technique adopted by the directorate of agriculture. Government of India (1974) put in an equation from which would be read as follows:

$$C.I = \{ (I_{aij} / I_{aio}) - (N_j / N_o) \} \times 100$$

Where as

C.I=cropping intensity

$a_{ij}$  = area under the  $i$ th crop in the  $j$ th year.

$a_{io}$  = area under the  $i$ th crop in the base year.

$N_j$  = Net area sown in the  $j$ th year and

$N_o$  = Net area sown in the base year.

Mohammad and Sharma (1999) have measured the cropping intensity in Iran using the formula:

$$C_i = |1 + \{ (GCA - NCA) / NCA \} J \times 100$$

Where as

C<sub>i</sub>= Cropping intensity

G.C.A. = Gross cropped area and

N.C.A. = Net cropped area

Singh (1976), measured the crop concentration index for the state of Haryana. His formula would be read as:

$$C_i = \frac{P_{ae}}{P_{ar}} \times 100$$

Where as

c<sub>i</sub> = Crop concentration index

P<sub>ae</sub>= Percentage of the crop 'a' to the total harvested area in an enumeration unit and

P<sub>ar</sub>= Percentage of the crop 'a' to the total harvested area in the entire region.

The intensification of cropping in any region depends on a number of factors. The climatic regimes and soil characteristics are important out of them. The combined influence of these factors is responsible for the land use and intensity changes.

The cropping intensity in eastern Uttar Pradesh has been computed for the twenty years from 1980 to 2000. The period of 20 years has been divided into three parts i.e. 1980-81, 1990 and 2000. Many new districts have been created in the given periods. But it is not possible to take new districts separately for the purpose of study due to lack of data. To determine the intensity of crop, an important formula has been used that gross cropped area is divided by net sown area and the result is multiplied by 100.

Mathematically, it may be written as:



$$\text{C.I.} = \frac{\text{G.C.A.}}{\text{N.S.A.}} \times 100$$

Where as.

C.I. = Cropping intensity

G.C.A. = Gross cropped area

N.S.A. = Net sown area

**Table:3.7**

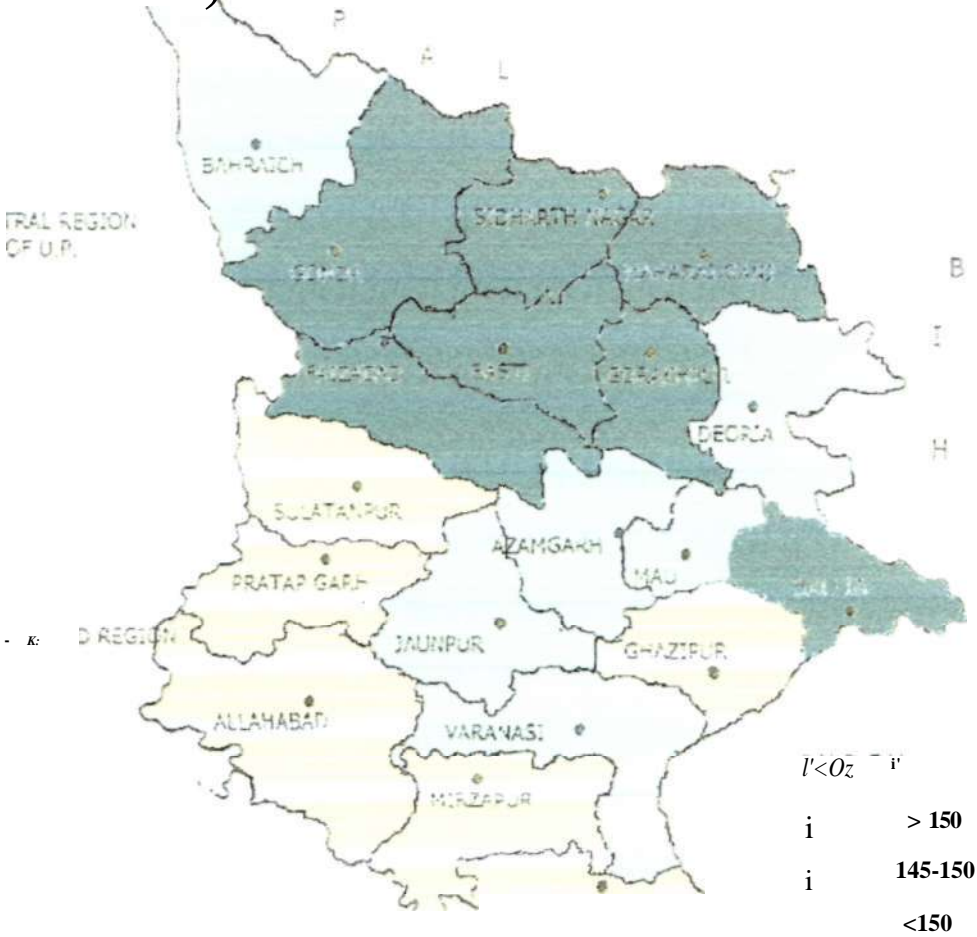
District wise- Cropping intensity (in percent) from 1980 to 2000

Districts	1980-81	1990-91	2000-01
Allahabad	137.69	136.12	148.13
Azamgarh(Mau)	147.67	162.88	165.36
Bahraich	149.58	142.33	150.25
Ballia	150.34	155.55	156.47
BastifS.Naear)	150.86	145.38	141.81
Deoria	148.05	152.24	152.14
Faizabad	150.90	153.97	157.52
Ghazinur	140.76	150.83	15371
Gonda	154.32	154.31	147.14
GorakhDur(maharaieani')	154.86	150 09	160 16
.lannnur	146.18	151.66	154.41
MirzapurCsonbhadra)	134.45	144 14	143 76
PratanL>arh	141.96	160.48	151.86
Sultanpur	142.26	154.87	154 31
Varanasi	145.31	166.26	159.02

ASTERN U^AR PRADESH

Cropping Intensity

1980



Soiiiixe; Naii.:)na: Ailai & Thematic Mapping Organisation, Calcutra

FIG 3.3 (a)

The cropping intensity values computed for all the districts of the study area are given in the table 3.7. The entire districts have been grouped into three distinct categories i.e. low, medium and high for the purpose of analysis.

In 1980-81, it may be seen from the table 3.7 that the district wise cropping intensity indices computed for the study area which shows that the highest intensity of crop was found in Gorakhpur (154.86%), Gonda ranks on second (154.32%) and the lowest cropping intensity was found in Mirzapur (134.45%). There were five districts which come under the category of high group of cropping intensity namely, Gorakhpur (154.86%), Gonda (154.32%), Faizabad (150.90%), Basti (150.86%) and Ballia (150.34%). Most of the districts are found in the central part of eastern Uttar Pradesh except Ballia which lie in east part of the eastern Uttar Pradesh which may be seen from the figure 3.3 (a).

Bahraich (149.58%), Deoria (148.05%), Azamgarh (147.67%), Jaunpur (146.18%) and Varanasi (145.31%) were the districts of the study area which comes under the category of medium group of cropping intensity. From the figure 3.3(a), it may be seen that the district Bahraich lie in the northern most part of the study area. Jaunpur and Azamgarh lies in the central part of study area whereas Deoria district lies in the most east part of the eastern Uttar Pradesh and Varanasi lie in the south east part of the study area.

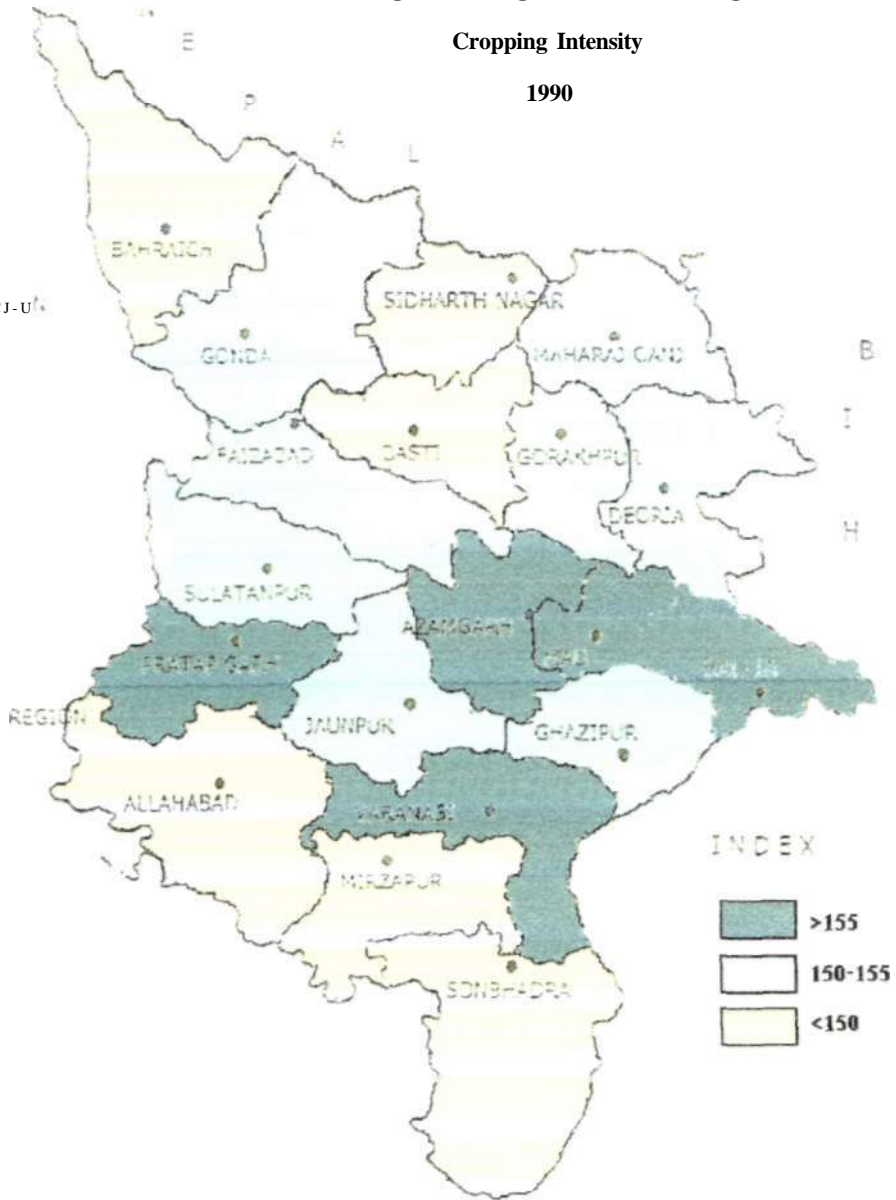
Five districts namely, Mirzapur (134.45%), Allahabad (137.69%), Ghazipur (140.76%), Pratapgarh (141.96) and Sultanpur (142.26%) lie under the category of low group of cropping intensity. From the fig. 3.3 (a), it may be clearly seen that these districts mainly lie in the southern most and south west part of the study area.

In 1990-91, it may be seen from the table 3.7 that many more changes have been taken place in the category of high, medium and low

# EASTERN U^AR PRADESH

Cropping Intensity

1990



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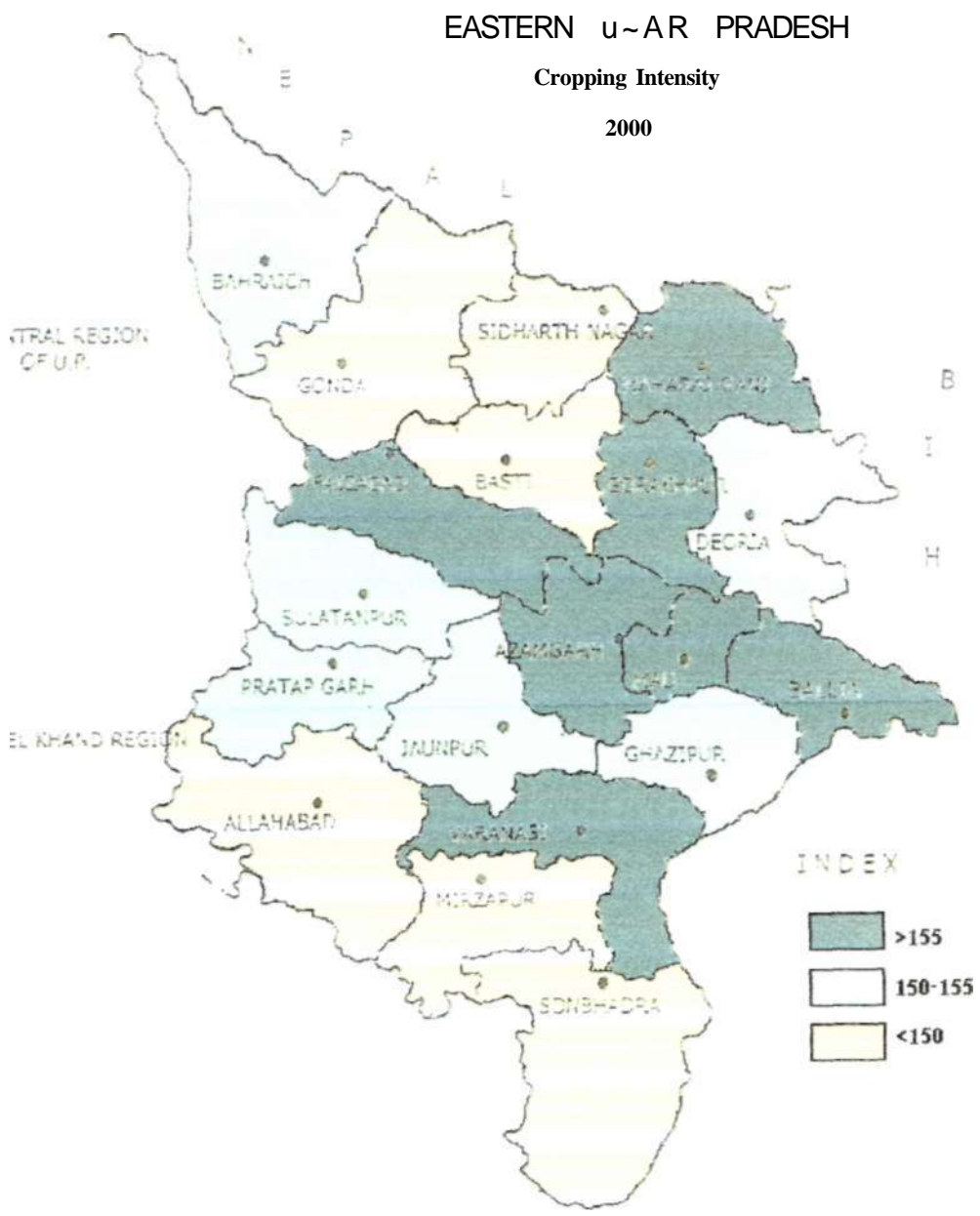
Source: National Atlas & Thematic Mapping Organization, Calcutta

FIG 3 J (b)

group of cropping intensity. In this period, highest intensity of crop was found in Varanasi (166.26%) which was followed by Azamgarh (162.88%) and the lowest cropping intensity was found in Allahabad with 136.12%. In this period, the district Varanasi and Azamgarh has shifted to high group of cropping intensity from medium group of cropping intensity. Pratapgarh has also shifted to high group of cropping intensity from low category of cropping intensity. It is remarkable that a district of low cropping intensity has been reached to high category within a period of ten years.

Seven districts namely, Sultanpur (154.87%), Gonda (154.31%), Faizabad (153.97%), Deoria (152.24%), Jaunpur (151.66%), Ghazipur (150.83) and Gorakhpur (150.09%) have come under the category of medium group of cropping intensity. From the figure 3.3(b), it may be seen that some changes have been taken place. During this period Gonda, Faizabad and Sultanpur districts lie in the west of eastern Uttar Pradesh while Jaunpur lie in the central part of eastern Uttar Pradesh, Gorakhpur lie in the north west and Ghazipur lie in east part of eastern Uttar Pradesh. In this period, Gonda and Faizabad shifted from high to low medium category of cropping intensity. Gorakhpur has shifted to medium group from high group but Ghazipur and Sultanpur has shifted to medium group from low group of cropping intensity. Jaunpur and Deoria having the same position of cropping intensity as were in 1980-81.

Basti (154.38%), Mirzapur (144.14%), Bahraich (142.33%) and Allahabad (136.12%) have come under the category of low level of cropping intensity. From the figure 3.3(b), it may be seen that the district Bahraich lie in the northern most part of the eastern Uttar Pradesh and Basti lies in the north central part whereas Mirzapur and Allahabad lies in the southern part of eastern Uttar Pradesh. In this period, a drastic change may be seen that Basti which was under the high group has shifted to low



Source;      National Atlas & The        
 Mapping Organization. Calcutta

FIG 33 (c)

group of cropping intensity and Bahraich has also shifted but from medium to low group of cropping intensity. Allahabad and Mirzapur retain the same group of cropping intensity as was in 1980-81.

In 2000-01, it may be seen from the table 3.7 that the cropping intensification is highest in Azamgarh with 165.36% which is followed by Gorakhpur (160.16%) and Varanasi (159.02%) and the lowest cropping intensity was found in the district of Basti with 141.82%.

From the table 3.7, it may be seen that five districts comes under the category of high cropping intensity namely, Azamgarh(165.36%) Gorakhpur (160.16%), Varanasi (159.02%), Faizabad (157.52%) and Ballia (156.47%). From the fig, 3.3(c), it may be seen that Azamgarh found in the central part, Ballia lie in the most eastern part of the eastern Uttar Pradesh, Varanasi lies in the south portion and Sultanpur lies in the west of eastern Uttar Pradesh.

From the table 3.7, it may be seen an interesting things that Faizabad and Gorakhpur districts which was shifted to medium category of cropping intensity from the high level of cropping intensity in 1990-91 but they again acquire the same position i.e. high level of cropping intensity as it was in 1980-81. Azamgarh and Ballia having the same position as they were in 1990-91.

Six districts namely Jaunpur (154.41%), Sultanpur (154.31%), Ghazipur (153.71%), Deoria (152.14%), Pratapgarh (151.86%) and Bahraich (150.25%). In this period, Pratapgarh was in high level of cropping intensity in 1990-91 shifted to medium level of cropping intensity and Bahraich has shifted from low group to high group of cropping intensity. Jaunpur, Sultanpur, Ghazipur and Deoria acquire the same position of cropping intensity as was in 1990-91.

It may be seen that four districts namely, Allahabad, Gonda, Mirzapur and Basti has come in the category of low group of cropping

intensity. All these districts having the same position as were in 1990-91 except Gonda. Gonda has shifted from medium group to low category of cropping intensity.



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## **CHAPTER -IV**

### **LEVELS OF DEVELOPMENT**

#### **IV-1 CONCEPTUAL FRAMEWORK**

The word "development" usually implies "growth" and "change", especially for the betterment of a place, or district, or region or a country. Ordinarily, development is taken to mean "economic development" it is taken to mean more and better-paid jobs, better hospital facilities, sport facilities and schools. Very often development is considered to be the equivalent of economic growth (Courtenay, 1985). According to the distinguished economists seers "development may be seen as improvement in the standard of living which includes social, cultural and political welfare as economic opportunities increase". Development, therefore implies improvement in opportunities to obtain education, participation in cultural and sporting activities received, necessary help care facilities, pleasant life and freedom from servitude to other people or institutions, as well as the opportunity to be properly fed, clothed and sheltered.

All development is relative. Most of the elements of development are interrelated and their analysis becomes complex. To use such elements or indicators to measure such a concept as development is called

surrogate measurement. Development is the significant process that has a potential for improving the poor and down trodden people in the world. However, with time the term has come to acquire wider meaning than mere economic even of social or even of social changes. It has come to connote the whole economy and society, qualitatively as well as quantitatively. Development is, thus, not merely economic growth but it is multi-dimensional change.

The concept of development represents the application of the general idea of progress in socio-political sphere. Progress and development or often described as synonyms. Both designate change in a forward direction and hence, a change that is not the expression of simple modification in time, but rather of a modification in the positive sense, of an improvement (UNESCO-1988). Progress in human history began at the time of renaissance with the birth of modern experimental science. Concept of development was launched in the wake of World War II. The study of development started in an era of optimism and growing prosperity in the core countries of the west. In the immediate post war year's development of the III World was perceived as the transition from a traditional to modern society. Decolonization pose a challenge to intellectual circle in the west as to which development model should be proposed for the new countries called "developing countries".

In the recent years and especially since the end of World War II in 1945, the development of the poorer countries has been an important international issue.

The study of development has involved economists in particular, and in political areas, the specialized agencies of the United Nations Organization -FAO, WHO and IMF in general have been active in assisting developing countries.

During the last fifty years some success has been achieved like increase in life expectancy, sharp decline in infant mortality rates, control on communicable disease, eradication of small pox and plague, improvement in education on all level that is technical and non technical and more availability of food supplies.

The interest of geographers in the subject of development is especially in seeking to understand the spatio-temporal variations in the level of development and to examine its determinants. The geographical study of development is concerned about discovering the patterns formed by the levels of developments. If the factors that have contributed to the particular pattern can be recognized, it may then be possible to understand more about the processes involved in high and low developed regions. If this can be done, then a useful step can be taken towards the possibility of raising the living standards of people in less developed regions. The process of development in India has been a matter of concern of the scholars of all most all disciplines especially economists, historians, sociologists, geographers and others. Researchers using net domestic products, sectoral and per-capita income for demarcating region have carried out the studies at national levels. Sampath (1977) is of the opinion that our national economic policies must have regard not only to economy of the country as a whole but also to the disparities between various regional economies.

The treatment of this theme by Yadav and Prasad (1966) and Gulati (1977) is more comprehensive. They have used a set of ten selected indicators related to income, employment in non -primary sector, literacy and infrastructure variables. Schwartzberg (1962) examined the alternative approaches to mapping of the level of economic development. He classified areas in the country into six types viz., isolated tribal economy, subsistence peasant economy, incipient commercialization, advanced

commercialization, economic diversifications and large scale organizations.

Mitra (1967) grouped all the districts of India into four categories on the basis of their relative level of development he used 63 indicators including general ecology, agricultural infrastructure, participation rates in traditional sector potential of human resources and distributive trade manufacturing and infrastructure. Raza (1978) analyzed the regional disparities in level of development in India in the context of political economy of the country. The India economic conference held at Patna in 1969 and the Geographical congress held in New Delhi in 1972 adopted regional disparities in development as the main theme of discussions.

The centre for monitoring Indian economy in 1987 has developed an aggregate index to show economic development using district data on a variety of aspects of development. The indices, a very high proxy of indicators for the Gross Districts Products of districts, have been computed from a selected nine base-component indicators: two from agriculture three from mining and manufacturing and four from service sectors. The conclusion was that all urban districts demonstrate very high level of development. Districts which are predominately agricultural (deltaic as well as interior districts) have also shown high level of development. Eight states are above all India average, while thirteen states and five union territories are on lower side. Level of development reflects a very high correlation with physio-climatic condition in India. A study by planning commission published in 1967 gave the picture of inter state variation in social and economic indicators of development. Regional disparities are apparent in the studies at state level. The studies devoted to identifications of levels of overall development make use of large number of indicators and they grouped these indicators into four

dimensions agriculture, secondary infrastructure and socio-cultural attributes.

One of the most serious problems in India is the regional disparities and it causes social, economic and political instability. This problem is found everywhere in India. Therefore, the author has selected to study the Eastern Uttar Pradesh, which is essentially an agricultural region of Uttar Pradesh. Here about 68% of population rest upon agriculture for their livelihood. As far as the development of this region concerned, there is considerable spatial disparity in the level of development. Development in terms of industrialization, urbanization, communication and other sectors are found only in few areas while the other is backward.

The present chapter is an attempt to measure spatial pattern of social and economic development and disparities in Eastern Uttar Pradesh. Such type of study provides a base for Nation planning and helps researchers, administrators, policy makers and planner to identify regions at different levels of development. Thus, measurement of disparities in terms of regional dimension is one the major pre-requisites for balance development because it provides policy guidance at the time of formulating plans for backward area development.

The inquiry in the spatial variation in the level of development in the study area is in conformity with the economic and social dimensions of development. They are examined in terms of:

## **IV-2. AGRICULTURAL DEVELOPMENT**

### **(a) Agricultural condition -**

- (i) Percentage of net sown area to total geographical area,
- (ii) Percentage of cultivators to the working population,
- (iii) Percentage of net area irrigated to net sown area.



(iv) Intensity of cropping.

**(b) Agricultural infrastructure -**

(i) Tractors per 10,000 hectares of net sown area,

(ii) Oil engines per 1000 hectares of net sown area,

(iii) Electric pumps per 1000 hectares of net sown area.

**(c) Agricultural production**

**IV-3. DEVELOPMENT OF ECONOMIC  
INFRASTRUCTURE**

**(a) Telecommunication -**

(i) Number of post offices per square kilometer,

(ii) Number of post offices per 1, 00000 populations,

(iii) Number of telephone exchange.

**(b) Transportation-**

(i) Surface of road length per 1000 square kilometer.

(ii) Village linked by road,

(iii) Surface road in kilometers.

**(c) Electricity supply -**

(i) Number of electrified villages.

- (ii) Percentage of village electrified.

#### **IV-4. EDUCATIONAL CONDITIONS-**

- (i) Percentage of literate to total population,
- (ii) Percentage of male literate to male population,
- (iii) Percentage of female literate to female population,
- (iv) Percentage of urban literate to urban population,
- (v) Percentage of rural literate to rural population.

#### **IV-5. MEDICAL HEALTH SERVICES**

- (i) Population served per hospital.
- (ii) Number of hospitals and dispensaries per 1,000 square kilometer.
- (iii) Number of beds per 1, 00000 populations in hospital.

#### **IV-6 INDUSTRIAL CONDITION -**

- (i) Number of industrial units per 10,000 populations.
- (ii) Number of industrial units per 100 square kilometers area.
- (iii) Percentage of industrial worker to the total population.
- (iv) Number of workers per 100 square kilometer area in industry.

All the above mentioned conditions and their respective indicators were analyzed with the help of a simple method known as composite index. Since the indicator varies from one region to another in their occurrence and they are not equally important. Therefore different weights are assigned to different indicators by the method of percent

proportional standardized mean, that is to say the weight assigned to one indicator is calculated by using  $a/b$  for each indicator where  $a$  is the series of one particular indicator and  $b$  is the standard deviation for same series. This  $a/b$  is the weight of each indicator. The formula for composite index number is

$$C.I. = \frac{a_1b_1 + a_2b_2 + a_3b_3 + \dots + a_nb_n}{b_1 + b_2 + b_3 + \dots + b_n}$$

Where as,

C.I.= Composite index

$a$ =Raw score of any indicator

$b$ =  $a/b$  or Mean/S.D.

The summary statistics of the indicators used in this study was processed with the help of above formula and the results obtained for development and overall development are shown in the different tables.

## IV-2: AGRICULTURAL DEVELOPMENT

Agriculture is one of the most important sectors in Indian economy because 70% population of India is engaged in this activity. In Eastern Uttar Pradesh also agriculture is the main activity. Uncertainty of rainfall made cultivation depend on irrigation- whatever was possible by lift irrigation, tube wells etc. Crop pattern closely followed the climatic pattern prevailing in each particular region. The traditional system of agriculture is well suited to local conditions. The standard to traditional agriculture, the seed yield ratio of wheat and rice and other crops is more

favorable than that of few better producing areas elsewhere in India. The system witnessed for expansion of output, which indeed did occur in certain period. This was achieved by an extension of acreage usually brought about by more irrigation. At the same time the farmers in certain areas have changed their mix in favour of any incentive for the adoption of innovation, which could raise the yield rate or productivity of labour.

The state has made a significant break through by increasing the food production, expansion of area under food crops, quality of seeds and high quality of fertilizers.

All condition mentioned above have produced nothing but the regional variation in agricultural development. In conformity with the focus of study and pursuance of objective, spatial variation in agricultural development in the study area has been measured. The measurement demanded a judicial choice of indicators. Every care has been taken to select such an indicator, which reflect the level of development. Although there could be several indicators of agricultural development. The indicators incorporated in the present study belong to two categories viz., agricultural condition and agricultural infrastructure. Therefore, in eastern Uttar Pradesh a number of indicators such as extent of area under various crops, net sown area, intensity of cropping, irrigation and so on have been considered to determine the agricultural development for the years 1980-81, 1990-91 and 2000-01.

### **Net sown area**

This represents the area under crops in a geographical area. In the recent past, the area under this category increased considerably due to technological development. But still there is a considerable scope for horizontal expansion of agriculture by bringing substantial portion of

waste land and fallow land under crop cultivation with the help of modern techniques.

## **Cultivator**

Measuring human dimension in today's agriculture is of great concern to all people who are engaged in agricultural planning. In most of the Third World countries. Majority of the population is adjusted in agricultural sector. The land for agriculture is becoming limited and hence, it can not increase beyond certain limits. A review of agricultural development is incomplete if per cultivator to the working population is not analyzed.

## **Irrigation**

Water is one of the basic inputs and foundation of scientific agriculture. All efforts to increase agricultural production will fail if the crops do not get the required moisture. The new package of input can not depend on rain alone, because rainfall is unequal and is irregular and shows considerable variation from year to year. Thus, irrigation facilities become necessary prerequisite for agricultural production.

## **Intensity of cropping**

Its signifies the farming practices for extracting the maximum output from a particular patch of land by growing crops more than once in a year. Looking at the physio-climatic constants of agriculture, the cultivators have to sustain themselves by growing more crops by intensive cultivation. For increased outputs and better utilization of cultivable land it will be desirable to introduce intensive methods of

cropping. Intensive cultivation of crops can be done by providing irrigation facilities, using better techniques of production, fertilizers, improve seeds.

#### **IV-2(b): AGRICULTURAL INFRASTRUCTURE**

In the recent years the development in farm technology has increased agricultural production of the country. The technological changes including the use of modern hand tools, tractors, threshers, oil and electric pumps play an important role in increasing agricultural productivity. The improved tools and farm implements can change appreciably the cropping pattern, cropping intensity and crop combination resulting into high agriculture relations. For measuring the levels of agricultural infrastructure in eastern Uttar Pradesh at district levels, three variables viz. tractors per thousand hectares to net sown area, oil engines per thousand hectares of net sown area and electric pumps per thousand hectares of net sown area.

##### **Tractor**

It has become instrumental in bringing about a tremendous change in agricultural productivity. The tractor is a prime mover and it is used exclusively for tillage. It also offsets labour shortage during the harvest season and ensures the timely ploughing and sowing the land.

##### **Oil engines and electric pumps**

Beside the use of biochemical and chemical inputs, the role of power inputs in the form of oil engines and electric pumps for the running of the tube wells, threshers, crushers, tractors etc. is of primary importance in modern agriculture. The kind and the frequency of its use

depending upon the farmers' capacity to produce and economic viability to their holdings.

#### **IV-2(c) AGRICULTURAL PRODUCTION**

Agriculture is a main stay of eastern Uttar Pradesh economy. Income from agriculture and allied sectors account for nearly 42% of the total domestic product. As a result of various agricultural production programmes high level of farms productivity have been achieved in the study area. The strategy for the development of agriculture has been to raise the economic standards of the farmers - both small and marginal.

Scheduled caste and schedule tribes fanners, due to agricultural schemes of increasing production per unit area, have been benefited from time to time. This was envisaged to be achieved through the distribution of high yielding variety of seeds, adequate and timely supply of fertilizers, plant protection materials and improve implements. Agricultural production is an index of agricultural efficiency of an area where as the availability of food grains reflects the relative prosperity of different areas. To measure agricultural production, average yield, grossvalue of food production and availability of food grains per head have been taken into consideration.

**Table 4.1**

Agricultural development

<b>Districts</b>	<b>1980</b>	<b>1</b>	<b>1990</b>	<b>2000</b>
Allahabad	74.04		154.64	175.02
Azamgarh (Mau)	87.00		166.16	115.39
Bahraich	75.00		91.07	110.30
Ballia	80.19		134.09	103.58

Basti (S.Nagar)	81.63	171.37	99.50
Deoria	77.73	106.57	106.22
Faizabad	82.66	185.84	120.89
Ghazipur	79.14	172.16	106.42
Gonda	79.00	110.07	96.58
Gorakhpur(Maharajganj)	81.64	154.22	110.95
Jaunpur	78.00	190.34	104.32
Mirzapur(sonbhadra)	71.86	92.65	96.18
Pratapgarh	72.70	151.87	197.62
Sultanpur	75.14	138.25	162.55
Varansi	80.38	196.52	106.13

On the basis of cited above table 4.1 composite index of the study area i.e. Eastern Uttar Pradesh is divided into low, medium and high level of agricultural development for all the three years (table4.1 (a)).

**Table-4.1 (a)**

**Levels of agricultural development**

<b>Levels of development</b>	<b>Composite index</b>	<b>Number of districts</b>	<b>Name of the districts</b>
<b>1980</b>			
Low	<75	3	Allahabad, Mirzapur (sonbhadra), Pratapgarh
Medium	75-80	6	Bahraich, Deoria, Ghazipur, Gonda, Jaunpur, Sultanpur
High	>80	6	Azamgarh, Ballia, Basti, Faizabad, Gorakhpur, Varanasi
<b>1990</b>			
Low	<100	2	Bahraich, Mirzapur (Sonbhadra)



Medium	100-150	4	{ Ballia ,Deoria, Gonda, Sultanpur
High	>]50	6	1 Al lahabad, Azamgarh(Mau) Basti(S.Nagar),Faizabad, Ghazipur,Gorakhpur(Maharajgunj), Jaunpur,Pratapgarh&varanasi

## 2000

Low	<100		Basti(S.Nagar), Gonda, Mirzapur,
Medium	100-150	9	Azamgarh(Mau),Bahraich,Ballia, Deorea,Faizabad,Ghazipur, Gorakhpur(Maharajgunj),Jaunpur Varanasi
High	>150	^ J	Allahabad,Pratapgarh,Sultanpur

From the given table 4.1(a), it can be seen that in general, there is medium and high level agricultural development in more than half of the districts of the region in all the three years of time. Mirzapur is the only district, which remained in the low level in all the three periods of time. Because here land is hilly tract and soils are not suitable for agriculture. Therefore, here development is low. Azamgarh and Basti is the two districts which were under high-level category in 1980and 1990 but moves to low level and medium level of categories in 2000 because of uncertain rainfall, the low level of irrigation development, low to medium intensity of cropping. Gonda is the other district which was under medium category in 1980 and 1990 but moved to low level category in 2000. Allahabad, Pratapgarh and Sultanpur are such districts which were under low and medium level of categories in 1980 and 1990 but moved to high level category in 2000. They made a good progress in agriculture. However, in general it can be said that most of the districts of Eastern Uttar Pradesh recorded the medium and high-level development in 2000. This indicates the higher use of fertilizers, high yielding variety of seeds

and pesticides, irrigation, tractors and other modern technologies and equipments. But in some area the low level of development is due to unfavorable topography, lack of capital, lack of diffusion of agricultural innovations, government policies.

#### IV-3 : DEVELOPMENT OF ECONOMIC INFRASTRUCTURE

The economic development of the area is best reflected in infrastructure facilities. The full development of an area is not only achieved through productive investment but by investment in basic economic infrastructure such as roads, electricity, water supply, communication etc. which facilitates an integrated economic activities. Hence development of economic infrastructure has been one of the important components of development planning. Moreover, regional evaluations will set trend and guideline for future progress. The present study examines the level of economic infrastructure in terms of villages served by post office, telephone, metalled roads and electricity supply.

##### 4.3(a) TELECOMMUNICATION

Telecommunication infrastructure by means of post offices, telephone etc. has played an important role in improving the life of rural people. In the present context of fast expanding world, the absence of this facility is an impediment to economic growth of an area. Telecommunication facilitates is a prerequisite for effective interaction between rural and urban settlements for domestic, economic, commercial and administrative purposes.

It is rightly observed by the famous economist Arthur Lewis that a cheap and extensive network of communication is the greatest blessing

which any country can have from the economic point in view. Development of communication system as that of transport system is vital in creating economic infrastructure for the industrial and agricultural development of economy. Communication is not only an amenity but infact, a key sector in economic development and constitutes the lifeline of industry and commerce. There is direct and positive relationship between communication and economic development. Important means of communication are post office, and telegraph, telephone and radios, television, computers-internet etc. In India this is the important sector and is under the direct control of the central government, the regional development of this sector very much depends upon the policies of the central government.

## POST OFFICES

The post office in eastern Uttar Pradesh is very well developed. Even although districts which have low level of institutional facilities, agriculture etc. have also shown high to very high index value of post office. This is the only way by which they fonn link outside areas. The post offices are well developed in all the villages of eastern Uttar Pradesh.

## TELEPHONE

The importance of this service requires no justification. As it is the fastest method of communication. Earlier telephone facilities were concentrated in the urban centers only but now e.xpansion has connected more and more villages by this facility. It is considered as the lifeline in the process of development and planning. However as stated earlier, there is a direct relationship between the level of economic development and

the development of communication and therefore, the use of communication services and means can be studied to analyse regional disparities in economic development. Thus, the data of communication services for Eastern Uttar Pradesh has been studied and a composite index has been prepared table 4.2 (a).

Then on the basis of this composite index of the Eastern Uttar Pradesh has been prepared & classified into low, medium and high levels of development in Table - 4.2(a).

**Table 4.2(a)**  
Communication Development

<b>Districts</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
Allahabad	0.46	0.56	0.106
Azamgarh(mau)	0.18	0.22	0.114
Bahraich	0.16	0.18	0.064
Ballia	0.18	0.22	0.126
Basti(s.nagar)	0.46	0.16	0.138
Deoria	0.14	0.15	0.048
Faizabad	0.26	0.33	0.089
Ghazipur	0.28	0.19	0.114
Gonda	0.15	0.18	0.035
Gorakhpur(maharganj)	0.17	0.33	0.970
Jaunpur	0.15	0.17	0.140
Mirzapur(sonbhadra)	0.23	0.27	0.045
Pratapgarh	0.15	0.18	0.094
Sultanpur	0.19	0.25	0.117
Varanasi	0.59	0.78	0.112

The table 4.2(a) shows that means of communication in eastern Uttar Pradesh has made good progress fi-om 1980 to 2000. In 1980, three districts were in high level development and three districts were under

medium level development. In 1990, the two districts were under high level development category and 6 districts were under medium level category' of development. But in 2000, 9 districts were moved to high level category of development and 3 districts were in medium level category respectively. In low level category, 9 districts were in 1980, 7 districts were in 1990 and 3 districts in 2000.

**Table: 4.2(al)**

**Levels of communication development**

<b>Levels of development</b>	<b>Composite index range</b>	<b>No. of districts</b>	<b>Name of the districts</b>	<b>1 i J</b>
<b>1980</b>				
Low	<0.20	<b>9</b>	Azamgarh,bahraich,ballia,deoria,jaunpur, Gorakhpur,gonda,pratapgarh,sultanpur	
Medium	0.20-0.40	<b>3</b>	Faizabad,ghazipur,mirzapur	
High	>0.4	<b>3</b>	Allahabad,basti,varanasi	
<b>1990</b>				
Low	<0.20	<b>7</b>	Bahraich,basti,deoria,ghazipur,gonad,jaunpur, Pratapgarh	
Medium	0.20-0.40	<b>6</b>	Azamgarh,ballia,faizabad,gorakpu,mirzapur Sultanpur	
High	>0.40	<b>2</b>	Allahabad, varansi	
<b>2000</b>				
Low	<0.05	<b>3</b>	Deoria,gonad, mi rzapur	
Medium	0.052-0.10	<b>3</b>	Bahraich, fai zabad, pratapgarh	
High	>0.10	<b>9</b>	Allahabad.azamgarh,ballia,bastti,ghazipur Gorakpur,jaunpur,sultanpur,varanasi	

From the table 4.2(al) given above, it can be easily seen that Allahabad and Varanasi are the two districts which recorded in the high

level category in 1980. Due to slow progress , it moved to low level category in 1990 but in 2000 it improved its level of category and regain the same position as was in 1980. Faizabad, Ghazipur and Mirzapur districts were in medium level category in 1980, Faizabad maintained its category in all the periods of time while Mirzapur maintained its category in 1980 but it slipped to low level of category of development in 2000 due to slow growth in means of communication. Similarly Ghazipur move to low level category of development in 1990 but due to good progress in means of communication, it entered its category to medium level in 1990 and again improved and proved its category level in high level of category of development in 2000. Ballia and Sultanpur maintained continuous progress and due to this, they improved there categories from low to high level; of category from 1980 - 2000. Gorakpur was in low level category in 1980 but due to good progress it entered into high level category of development in 1990 and maintained the same in 2000 while Jaunpur made a very slow progress in 1980 and 1990. and remained in low level categories in these two periods of time but in the next period of time, it made high progress and entered the high level category i.e. In 2000. Deoria, Gonad, Bahraich and Pratapgarh made slow progress in the development of means of communication and due to this , Deoria and Gonda remained low level category of development in all the periods of time while Bahraich and Prtapgarh made some progress in 2000 and moved from low level category in 1980 and 1990 to medium level category in 2000.

#### **IV-3(b) TRANSPORT**

Transport is an essential economic infrastructure for the rapid development of any region. In planned economy, location of industries.

development of backward areas, decentralization of economic activities, better distribution of products better maintenance of law and order situation, defence and security, all necessitates a proper system of transport . The modern concepts of growth centers and growth poles etc. in regional planning can meaningfully be implemented only, if there is a proper transport network within a region, the lack of transport facilities retard the process of economic development even if a region is endowed with rich mineral resources or other natural resources , because their availability and utilization may not always coincide . Therefore, it is said that in the regional development of any region, there should be well developed transport system either it is roads or rails.

## **ROADS**

The means of transport is highly dynamic agent of growth. Since it increases the mobility of goods and resources, expands trade and commerce, contribute to specialization and generate external economies. BERGER 1965 considered economic development as positively correlated to transport facilities. Road transport is the lifeline of the eastern Uttar Pradesh economy and is most popular. In spite of the efforts of state government to improve the road transport regional variation still exist from one region to another. Railway facilities are well developed in eastern Uttar Pradesh also. The eastern Uttar Pradesh is well connected with internal transport system of the country. The region is well served with the railways and roadways and the 3 districts namely, Varanasi, Allahabad, and Gorakhpur are connected with the different parts of the country by airways also.

Thus considering the transport system in the study region, a composite index Table 4.2(b1) has been prepared on the basis of table 4.2b, the

region is classified into 3 levels of development i.e. Low, medium and high which can be seen in Table 4.2(b1)

**Table 4-2b**

Transportation development

<b>Districts</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
Allahabad	239.99	358.03	357.90
Azamgarh(mau)	198.70	294.48	335.17
Bahraich	177.24	222.21	251.51
Ballia	211.15	307.22	335.53
Basti(S.Nagar)	155.55	227.81	188.42
Deoria	174.21	235.17	281.72
Faizabad	175.24	244.13	295.69
Ghazipur	210.11	366.20	389.36
Gonda	179.90	225.38	225.52
Gorakhpur(Maharganj)	152.86	223.35	245.58
Jaunpur	216.47	339.41	336.92
Mirzapur(Sonbhadra)	246.50	364.21	247.66
Pratapgarh	220.43	327.00	354.65
Sultanpur	233.82	381.49	360.56
Varanasi	203.80	363.35	478.18

From the Table 4-2(b1), it can be easily seen that the transport system is well developed in most of the districts of eastern Uttar Pradesh. Nearly 53% districts of this region recorded the high level category of development in all the periods of time. Allahabad, Ballia, Ghazipur, Jaunpur, Pratapgarh, Sultanpur and Varanasi maintained the high level development in 1980, 1990 and 2000. Mirzapur was in high-level category in 1980 and 1990 but moved to low level in 2000 due to slow progress while Azamgarh was in medium level category of development



in 1980 but improved its category from medium to high-level category in 2000. Similarly Bahraich, Faizabad and Gonda were in medium level in 1980 and they moved to low level category in 1990 due to slow development but in 2000 Bahraich and Faizabad improved their position and moved to medium level of development while gonad remain in low level category of development. Basti, Deoria and Gorakhpur are the other districts if the region which remained in low-level category in 1980 and 1990 due to slow progress. In 2000 Basti and Gorakhpur remained in the same category while Deoria moved to medium level category of development due to some development in transport networks by the efforts of government policies and people awareness.

**Table 4-2(bI)**

Transport development

<b>Levels of development</b>	<b>Composite index range</b>	<b>No. of districts</b>	<b>Name of the districts</b>
<b>1980</b>			
Low	<175		Basti, Deoria, Gorakhpur
Medium	175-200	<b>4</b>	Azamgarh, Bahraich, Gonad, Faizabad
High	>200	<b>8</b>	Allahabad, Ballia, Ghazipur, Jaunpur, Mirzapur Varansi, Pratapgarh, Sultanpur
<b>1990</b>			
Low	<250	<b>5</b>	Basti, Deoria, Faizabad, Gonda, Gorakhpur
Medium	250-300	<b>2</b>	Azamgarh, Bahraich
High	>300	<b>8</b>	Allaghabad, Ballia, Ghazipur, Jaunpur, Mirzapur Pratapgarh, Sultranpur, Varanasi
<b>2000</b>			

Low	<250	4	Basti,Gonda,Gorakpur,Mirzapur
Medium	250-300	3	Bahraich,Deoria,Faizabad
High	>300	8	Allahabad, Azamgarh,Ballia,Ghazipur,Jaunpur, Pratapgarh,SLiltanpur,Varanasi

#### **IV-3c: ELECTRICITY SUPPLY**

Electricity plays its own role in the quest for development. Availability of power is crucial to modernization of agriculture, establishment of industries and running of diverse educational, medical and other facilities. Eastern Uttar Pradesh has a vast hydel potential and through preliminary hydrological, topographical and geological investigation. The huge hydel potential of the study area can play a major role in power development programmes. Consumption of electric power in the major sector of the economy has increased rapidly. In the agricultural sector, the consumption of electric power is less as compared to industrial sector, which consumes many million units. Power is an essential energy input to sustain the economic activities of a region and for its socio-economic growth. High standard of living and high productivities of industry and agriculture have been possible due to abundant supply of energy at low price. In fact, there is a direct relationship between the use of energy and level of development. There are three sources of power namely- coal, petroleum and hydro-power. In view of the increase in the prices of oil and coal, the hydro-power constitutes the most economic source

**Table: 4. (2c)**

## Electricity development

<b>Districts</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
Allahabad	65.31	108.00	191.13
Azamgarh(mau)	38.72	56.17	658.42
Bahraich	24.03	65.86	43.87
Ballia	26.75	94.17	84.92
Basti(S.Nagar)	27.85	28.57	49.70
Deoria	30.65	63.41	55.09
Faizabad	47.87	86.95	104.64
Ghazipur	38.65	97.61	93.59
Gonda	24.58	55.00	52.81
Gorakhpur(Maharganj)	34.84	47.70	104.77
Jaunpur	28.55	89.5]	84.27
Mirzapur(Sonbhadra)	137.15	283.30	1162.78
Pratapgarh	25.54	66.39	47.21
Sultanpur	58.10	92.46	79.60
Varanasi	48.18	84.44	138.31

of power development in the country. It is estimated that hydro-power stations contribute about 40 percent to the total present production of electrical energy in the country. The availability of cheap and reliable electric power stimulates industrial activity. The per capita consumption of electric energy is one of the reliable indicators for the economic prosperity of a region. Therefore, it is essential that all the regions should be benefited from the electric power for the rapid industrialization and development of backward areas. Therefore, in this study, an attempt has been made to examine the levels of power development in districts of eastern Uttar Pradesh. For this, a composite index of power development in different districts has been prepared in table 4.2(c1). On the basis of

4.2c - high, medium and low level of development categories has been made for all the three periods, which can be seen from the table 4.2(c1)

**Table 4.2(c1)**

**Electricity development**

<b>Levels of development</b>	<b>Composite index range</b>	<b>No. of districts</b>	<b>Name of the districts</b>
<b>1980</b>			
Low	<25	<b>2</b>	Bahraich, Gonda
Medium	25-50	<b>11</b>	Azamgarh(Mau), Ballia, Basti(S.Nagar), Deoria, Faizabad, Ghazipur, Gorakpur(Maharajganj), Jaunpur, Pratapgarh, Sultanpur Varansi
High	>50	<b>2</b>	Allahabad, Mirzapur(Sonbhadra)
<b>1990</b>			
Low	<50	<b>2</b>	Basti(S.Nagar), Gorakpur(Maharajganj)
Medium	50-100	<b>11</b>	Azamgarh(Mau), Bahraich, Ballia, Deoria, Faizabad ,Ghazipur, Gonda, Jaunpur, Pratapgarh, Sultranpur, Varanasi
High	>100	<b>2</b>	Allahabad, Mirzapur(Sonbhadra)
<b>2000</b>			
Low	<50	<b>3</b>	Bahraich,Basti(S,Nagar),pratapgarh,
Medium	50-100	<b>6</b>	Ballia, Deoria, Ghazipur, Gonda Jaunpur, Sultanpur
High	>100	<b>6</b>	Al lahabad, Azamgarh(Mau),

Faizabad, Gorakhpur(Maharajganj),	1
Mirzapur(Sonbhadia)	
Varanasi	j

Above table shows that, in eastern Uttar Pradesh, the power development was slow in 1980 and 1990 but after 1990, power development was high. In 1980, only two districts namely Allahabad and Mirzapur were in high level category and in 1990, again the two districts Allahabad and Mirzapur were in the same category but *in* 2000 besides these two districts, four more districts joined the high level development category i.e. Azamgarh, Faizabad, Gorakhpur and Varanasi. Azamgarh, Faizabad and Varanasi were in medium level category in 1980 and 1990 but due to good growth, they moved to high level category of development in 2000. Similarly, the districts Ballia, Deoria, Ghazipur, Gorakhpur, Jaunpur and Sultanpur remained in the medium level category in all the three periods of time due to moderate growth in the power sector. Basti and Pratapgarh are the two such districts which were in medium level category but due to slow progress, Basti moved to low level category in 1990 and 2000 while Pratapgarh maintains its position in 1990 but move to low level category in 2000.

#### **IV-4: EDUCATIONAL CONDITION:**

The principal institutional mechanism for developing human skill and knowledge is the formal education system. The rapid quantitative expansion of educational opportunities held the basic key to material development. Education has long been recognized as vital to development not only in fostering attitudes and aptitude related to economic and social but also in meeting the basic needs for all the individuals. The

educational institutional deserve first priority as education is one of those instruments that illuminate the social fabric, speed up modernization process and development.

The role of education in the development of agriculture hardly needs emphasis. Various studies (Mohammad, 1981 and Rangaswamy, 1972), have proved that there is a close relationship between educational level and adoption of agricultural innovations which in turn affects agricultural productivity. Education brings about drastic changes in human thinking and it plays as a catalyst in the production process through organizational and managerial availability. Since it is strongly believed that higher the economic status, higher is the level of education. Therefore, it follows that rise in income either from agriculture or non-agriculture is a pre-requisite for rise in the standard of education. Hence, it justifies the choice of education as an indicator for socio- economic development. Levels of educational development can be assessed by the way of flow concept and stock concept. The number of students enrolled is a flow concept while percentage of literate can be treated as stock concept. After survey, the indicator for whom the data was available at district level, the author selected literacy level, percentage of total literate to total population, total male literate to male population, total female literate to female population, and so on. On the basis of this infomiation, a composite index has been prepared for the educational development for the year 1980, 1990 and 2000 in Eastern Uttar Pradesh which can be seen in table 4.3a.

**Table 4.3a**

Educational development

<b>Districts</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
Allahabad	19.08	42.88	25.44
Azamgarh(Mau)	17.96	42.39	24.49
Bahraich	11.47	27.78	14.67
Ballia	19.68	45.34	26.45
Basti(S.Nagar)	18.86	33.21	30.95
Deoria	25.84	37.40	21.58
Faizabad	18.00	39.70	25.06
Ghazipur	19.62	41.97	25.77
Gonda	11.15	31.75	16.51
Gorakhpur(Maharganj)	17.19	35.84	21.84
Jaunpur	18.78	40.16	25.15
Mirzapur( Sonbhadra)	16.62	37.95	21.67
Pratapgarh	17.13	40.60	24.74
Sultanpur	15.80	40.69	23.53
Varanasi	21.96	42.87	27.64

On the basis of composite index, the high, medium and the low levels of development of education have been studied which can be seen from the table 4.3(a1). From the table 4.3(a1), it can be easily seen in 1980 that Varanasi and Deoria districts found in the category of high level of development and Bahraich and Gonda are found in low level of development while the other districts of eastern Uttar Pradesh have medium level development in education. But situation has changed in 1990 and 2000. In 1990 and 2000, seven districts recorded in the high level category of development. Allahabad, Ballia, Ghazipur and Jaunpur were under the medium level category in 1980 but due to good progress, these districts entered in the high-level development category in 1990 and 2000. Faizabad also improved its category from medium level in 1980 and 1990 to high levels of development in 2000. Similarly Basti also made good progress and entered in the high-level development category

in 2000, while it was in medium level in 1980 and low levels of development in 1990. Pratapgarh and Sultanpur are such districts which improved their positions from medium level in 1980 to high level in 1990 but they again slipped to medium levels of development in 2000, due to slow progress in educational development during this period. Deoria is the only district which was in high level of development in 1980 and moved to medium level in 1990 and 2000. Mirzapur also maintained its medium level category in all periods while Bahraich and Gonda is least developed district and remained in low level of development in all periods.

**Table 4.3(al)**

Educational development

Levels of development	Composi- te index	No. of districts	Name of the districts
<b>1980</b>			
Low	<15	2	Bahraich, Gonda,
Medium	15-20	11	Allahabad Azamgarh,, Ballia , Basti Faizabad, Ghazipur Gorakpur, Jaunpur, Mirzapur Pratapgarh, Sultanpur
High	>20	2	Deoria, Varanasi,
<b>1990</b>			
Low	<35	3	Bahraich, Basti,, Gonda,
Medium	35-40	4	Deoria , Faizabad ,Gorakpur Mirzapur
High	>40	8	Allaghabad ,Azamgarh,, Ballia, Ghazipur, Jaunpur,



Pratapgarh, Sultranpur, Varanasi			
2000			
Low	<20	2	Bahraich, Gonda,
Medium	20-25	6	Azamgarh, Deoria, Gorakpur
			Mirzapur, Pratapgarh, Sultanpur
High	>25	7	Allahabad,, Basti,ballia, Faizabad
			Ghazipur, Jaunpur,
			Varanasi
...			

The educational development facilities of schools and colleges are mainly confined to urban centre and there are very few schools and colleges in rural areas in comparison to urban areas. It leads the disparities in the levels of educational development. The high level development has been recorded only in those districts which have large number of settlements in tens of population while rural areas are less developed but the conditions of rural areas are improving day by day by the people awareness and the efforts of government.

#### IV-5: MEDICAL HEALTH SERVICES

Health services are only one among many forms of provisions needed for improved health is well known. There are varieties of other indicators which are equally important for improvement of health condition. As for health services themselves are concerned, emphasis might be laid in the right direction if other service features become the standard indicator such as availability of rural health clinic, trained medical personnel etc. (Wood, etc., 1982). Health care of people is a pre-requisite to become employable productively. Most of the health services are available in the urban centre. Health is also a very important component

for the success of family planning programmer, and therefore, it deserves special attention. Medical facilities are essential to check on mortality rates of population. The ultimate aim of all economic policies is to achieve a healthy nation. A healthy nation can emerge only when there is adequate supply of properly balanced food and people are not under nourished or malnourished. It is really more important for the health of nation that there should be adequate nutrition, supply of pure water, good sanitation and lack of pollution. Thus a war on ill health is essentially a war on poverty and all its blood. The nation should have health approaches in all its socio-economics scheme and should give health education to the masses. They should also give good and adequate health services to the community. A successful approach is one when the disproportion is corrected by giving priority in the allocation of funds and personals to the rural areas and back ward regions. In Eastern Uttar Pradesh, the health services have been studied for the periods of 1980, 1990 & 2000 which can be seen in table 4. 4(a).

**Table 4.4**

Medical health servies

<b>Districts</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
Allahabad	2.14	4.21	5.66
Azamgarh(mau)	1.02	3.43	3.00
Bahraich	5.20	2.25	2.08
Ballia	1.51	3.60	3.38
Basti(S.Nagar)	0.90	2.83	2.44
Deoria	0.92	3,11	1.58
Faizabad	1.36	3.49	3.32
Ghazipur	<b>1.18</b>	3.52	2.56

Gonda	1.36	2.25	2.57
Gorakhpur(Maharganj)	1.51	3.34	3.13
Jaunpur	0.96	3.53	2.53
Mirzapur( Sonbhadra)	1.08	3.16	2.60
Pratapgarh	1.01	3.71	3.15
Sultanpur	1.70	3.39	3.21
Varanasi	2.27	4.37	6.02

On the basis of table 4.4(a), a composite index 4.4(al) has been prepared for all the three years. The whole region is divided into three categories i.e. high, medium and low levels of development.

**Table 4.4 al**

### Medical health servies

<b>Levels of development</b>	<b>Composite index range</b>	<b>No. of districts</b>	<b>Name of the districts</b>
<b>1980</b>			
Low	<1	3	Basti Deoria, Jaunpur
Medium	1-2	9	Azamgarh,, Ballia , Faizabad, Ghazipur Gonda Gorakpur,, Mirzapur Pratapgarh, Sultanpur
High	>2	3	Allahabad Bahraich,,Varanasi,
<b>1990</b>			
Low	<3	3	Bahraich, Basti,, Gonda,
Medium	3-4	10	Azamgarh, Ballia,Deoria, Faizabad , Ghazipur,, Jaunpur Gorakpur Mirzapur, Sultranpur, Pratapgarh

High	>4	2	Allaghabad ,Varanasi
		2000	
Low	<3	8	Azamgarh,Bahraich Basti, Deoria, Ghazipur, Gonda, Jaunpur, Mirzapur
Medium	3-5	5	Ballia, Faizabad Gorakpur, Pratapgarh, Sultanpur
High	>5	2	Allahabad, Varanasi

Above table shows that only Allahabad and Varanasi maintained high level category of development in all the three periods of time while Gorakhpur was in medium level of development *in* 1980. Bahraich is the only district which was in high levels of development in 1980 but due to slow progress, it declined to low levels of development in 1990 and 2000. Ballia, Faizabad, Pratapgarh and Sultanpur districts maintained the medium levels of development in all the periods of time while Azamgarh, Ghazipur and Mirzapur districts moved to low level category in 2000 from medium level category in 1980 and 1990 due to slow progress in medical health services. Basti, Deoria and Jaunpur district were in the low level category in 1980 but Deoria and Jaunpur districts improved their position and recorded their names in the medium level of development in 1990 but in 2000, Basti, Deoria and Jaunpur were again under the low level of development as were in 1980 due to less development. Gonda was in medium leveled development in 1980 but in 1990 and 2000, it entered into low level of development due to poor development.

#### **IV-7: OVERALL DEVELOPMENT**

As far as the overall development in eastern Uttar Pradesh is concerned, there exists a wide gap in the levels of development. The diverse physical, demographic, and cultural and economic attributes of the region results in the unequal distribution of resources and therefore we find the regional variations in the levels of development in Eastern Uttar Pradesh. The analysis is based on the data for the years 1980, 1990 and 2000 table 4.5.

**Table: 4.5**

Overall development					
<b>Distrirts</b>	<b>1980</b>	<b>Districts</b>	<b>1990</b>	<b>Districts</b>	<b>2000</b>
Mirzapur	491.14	Mirzapur	787.29	Mirzapur	1607.80
(Sonbhadra)		(Sonbhadra)		(Sonbhadra)	
Allahabad	422.70	Varanasi	774.47	Azamgarh	1543.60
				(Mau)	
Sultanpur	408.66	Allahabad	754.56	Varanasi	1171 10
Varanasi	377.33	Ghazipur	704.19	Allahabad	1097.40
Ghazipur	371.68	Jaunpur	694.37	Gorakhpur	732.48
				(Maharajganj)	
Azamgarh	371.32	Sultanpur	679.03	Sultanpur	728.38
(Mau)					
Jaunpur	362.73	Pratapgarh	614.64	Ghazipur	706.82
Ballia	361.10	Ballia	614.03	Jaunpur	674.25
Pratapgarh	357.83	Faizabad	605.99	Deoria	674.21
Faizabad	347.30	Azamgarh(Mau)	591.81	Ballia	663.12
Deoria	333.44	Deoria	503.50	Pratapgarh	657.38
Gonda	323.77	Basti(S.Nagar)	498.31	Faizabad	622.82
Bahraich	313.08	Gonda	448.00	Gonda	449.75
Basti	311.54	Gorakhpur	428.77	Basti(S.Nagar)	446.48

(S. Nagar)		(Maharajganj)			
Gorakhpur	110.37	Bahraich	425.71	Bahraich	361.26
(Maharajganj)					

In all the three years i.e. 1980, 1990 and 2000, the study region is divided into three categories of development- high, medium and low.  
 Table4.5a, 4.5b, 4.5c and figures 4.1, 4.2 and 4.3.

**TABLE 4.5a**

Levels of overall development

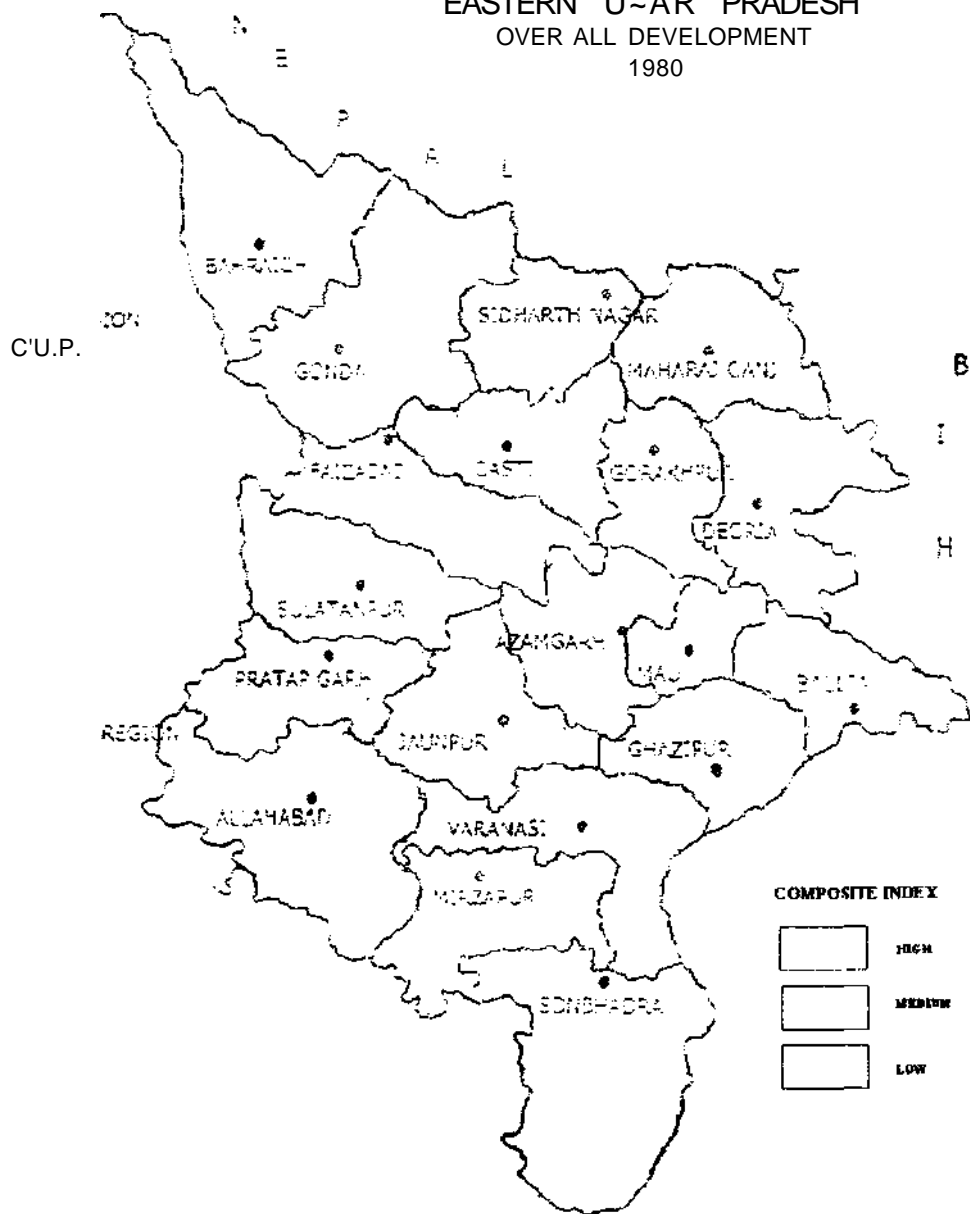
Levels of development	Composite index range	No. of districts	Name of the districts
<b>1980</b>			
Low	<350	<b>6</b>	Gorakhpur(Maharajganj), Basti, (S.Nagar), Bahraich, Gonda, Deoria, Fiazabad.
Medium	350-375	<b>5</b>	Pratapgarh, Ballia, Jaunpur, Ghazipur, Azamgarh(Mau).
High	>375	<b>4</b>	Allahabad, Mirzapur(Sonbhadra), Varanasi, Sultanpur
<b>1990</b>			
Low	<550	<b>5</b>	Basti(S.Nagar), Bahraich, deoria, Gonda, Gorakhpur(Maharajganj),
Medium	550-675	<b>4</b>	Azamgarh(Mau), Ballia, Deoria,

			Faizabad, Pratapgarh,
High	>675	6	Allaghabad, Ghazipur, Jaunpur, Sultanpur, Mirzapur, Varanasi.
		2000	
Low	<600	>	Bahraich, Basti(S Nagar), Gonda,
Medium	600-900	8	Faizabad,Bal'ia- Pratapgarh.Deoria, Ghazipur, Jaunpur, Sultanpur, Gorakhpur(Maharajgamj),
High	>900	4	Allahabad, Azamgarh(Mau), Mirzapur(Sonbhadra), Varanasi

#### IV-7.1: LEVELS OF OVERALL DEVELOPMENT IN 1980.

In 1980, it has been observed from the figure 4.1 that the levels of development were high in south and decreased in north. The districts fall under the category of high level development form a significant region in south and south-west part of the region. These districts are Varanasi, Sultanpur, Allahabad and Mirzapur(Sonbhadra). Here, the high level of development is due to the high level of industrial and infrastructure facilities. In these districts we find a large number of small scale and large scale industries. Similarly in Varanasi districts there is high level of agricultural development which also corresponds to the high level socio-economic development. Besides these, Ailahabd and Varanasi are religious centers and encourage the tourism development, so it also helps in the development of these districts. The medium levels of development are found in central part of the region, which includes five districts. These

# EASTERN UTTAR PRADESH OVER ALL DEVELOPMENT 1980



Source: National Atlas & Thematic Mapping Organisation, Calcutta

FIG 4.1



districts are Pratapgarh, Ballia, Ghazipur, Jaunpur, and Azamgarh (Man). Here medium level of development has experienced because of medium level development in agriculture, industries, education, transport etc. These districts do not have well developed in agriculture and they do not have any industrial belt. In this period the low level development is found in the northern region. Whole of northern part of eastern Uttar Pradesh experienced low level of development in 1980 which can be seen from the fig. 4.1. This part includes six districts namely Bahraich, Gonda, Faizabad, Basti (S.Nagar), Gorakhpur (Maharajganj) and Deoria. In these districts, the low level of development is due to the poor infrastructure facilities and low level of agricultural development. In general there is no any advancement in the field of industries. Some agricultural development is found in the districts of Gorakhpur, Basfi (S.Nagar) and Faizabad but due to the low level of development in other sectors, these districts came in the category of low level of development.

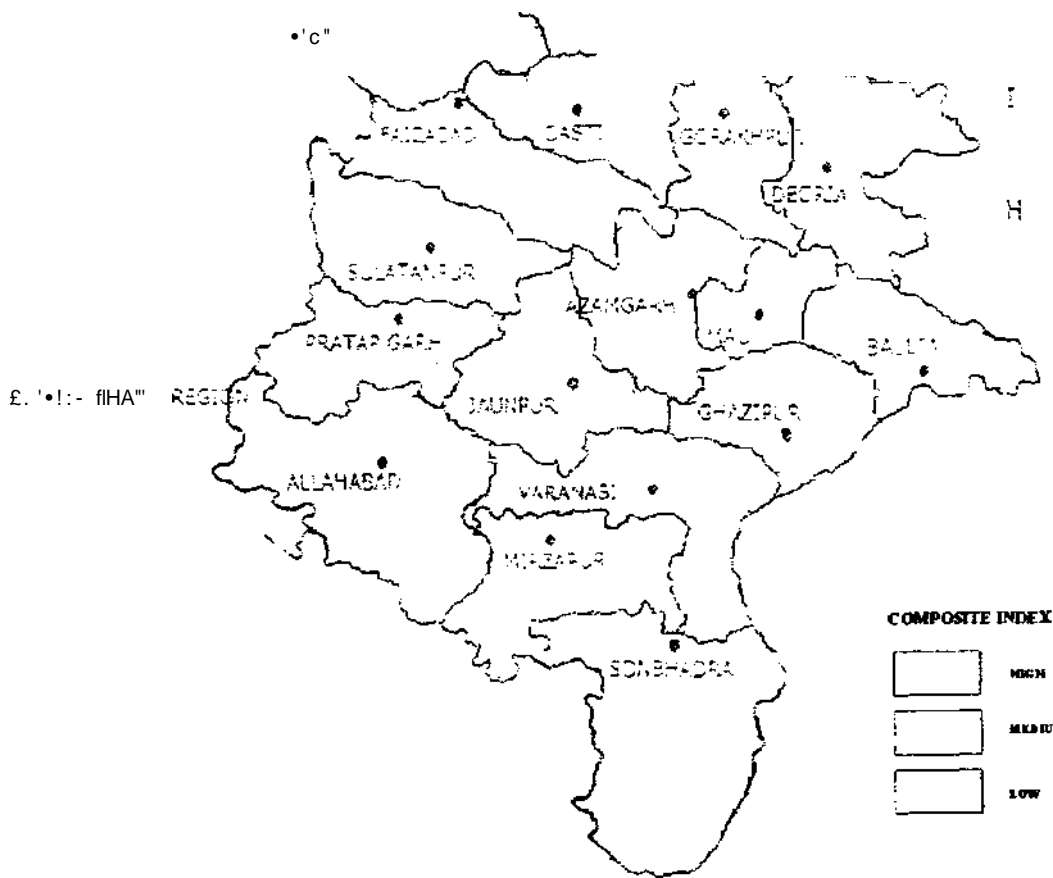
#### **IV-7.2: LEVELS OF OVERALL DEVELOPMENT IN 1990**

In 1990, the regional variation in the levels of development was almost in conformity with that of 1980 which can be seen from the Fig. 4.2. In 1980, there were four districts under the category of high level of development but in 1990, the number of these districts rose from four to six districts. The two new districts are Jaunpur and Ghazipur. However, in all these districts, the high level of development is related with the significant contribution of power, industrial, education and various other socio-economic and infrastructural facilities. Jaunpur and Ghazipur districts attained the high level of development because of agricultural development in Jaunpur and agriculture and some extent to small scale

SV

EASTERN UTTAR PRADESH  
OVER ALL DEVELOPMENT  
1990

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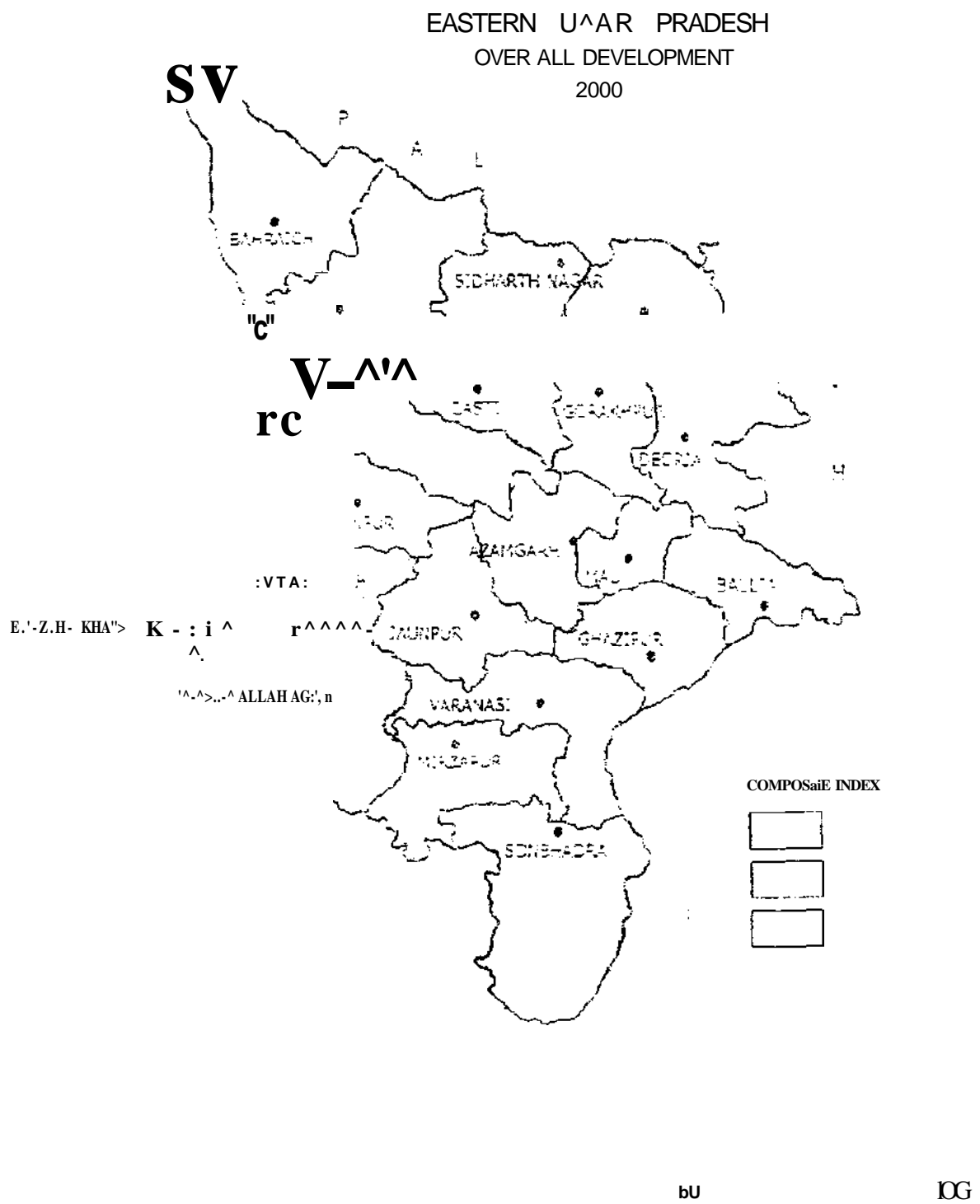


Source: National Atlas & Thematic Mapping Organisation, Calcutta

industrial development in Ghazipir. As far as the medium level of development is concerned, there are four districts namely Ballia, Faizabad, Azamgarh (Mau) and Pratapgarh. Faizabad was in the category of low level of development in 1980, but due to rapid progress in various socio-economic infra-structural facilities, it entered to medium level of development. However, in all these districts, the medium level of development is related with some development in the field of agricultural and infrastructural facilities. Similarly in 1990, the low level development districts are those which were in 1980 except Faizabad. The district Faizabad is the only district which rose from low level of development to medium level due to good development in agriculture. The main causes in these districts for the low level development are the lack of agricultural and some other infra-structural facilities.

#### IV-7.3: LEVELS OF OVERALL DEVELOPMENT IN 2000

It has been observed that most of the districts maintain their categories according to 1980 and 1990 which can be seen from the figure 4.3, but in some districts changes has been found from low to medium and high, and from medium to high and from high to medium. The high level of development is found in Allahabad and Varanasi in all the three periods of time. Mirzapur (Sonbhadra) always maintain its position in high level development as was in 1980. Sultanpur is the only districts which was under high level of category in 1980 and 1990 but slipped to medium level in 2000. The main reasons of this were the low development in electricity, health and education sector in 2000. The other districts which also attain the high level of development in 2000 are Ghorakhpur and Azamgarh (Mau). While Azamgarh (Mau) was in the



Source: National Atlas & Thematic Mapping Organization, Calcutta

FIG 43

medium levels of development in 1980 and 1990. In 2000, they reached the high level of development because of good development in power, transport sectors during this period.

As far as the medium level of development is concerned, there were five districts in 1980, six districts in 1990 and eight districts in 2000. Two districts namely Pratapgarh and Ballia remained in medium level of development in all the three periods of time due to constant growth in all the sectors while Deoria, which was in low level of development in 1980 and 1990 moved to medium level development category in 2000 due to rapid growth in industries, transport and agricultural sectors etc. Similarly, Faizabad which was in low level category in 1980 moved to medium level category in 1990 and maintained the position in 2000 due to good progress in education, communication, transport, electricity supply and health sectors. Sultanpur is the other districts in this category which was under high level of development in 1980 and 1990 slipped to medium level of development in 2000 because of slow and stagnant growth in banking system, health, education, agricultural sector and transport sectors. The remaining two districts of this categories are Jaunpur and Ghazipur, they were in medium level of development in 1980 and moved to high level of development in 1990 but went down to medium level category again in 2000 due to the less development in agriculture , health and education sectors.

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# **CHAPTER-V**

## **RURAL TRANSFORMATION**

### **V-1. : CONCEPTUAL FRAMEWORK**

As a concept, it controls overall development of rural areas with a view to improve the quality of life of rural people. In this sense it is comprehensive and multi-dimensional concept and encompasses the development of agriculture and allied activities in the village and cottage industries and crafts, socio-economic, infrastructure, community services and facilities and above all the human resources in rural areas (Singh, 1986). As a phenomenon it is the result of interaction between various physical, technological, economic, socio-cultural and institutional factors.

As a strategy, it is designed to improve the economic and social well being of a specific group of people viz. the rural poor (world bank, 1975). As a discipline, it is multi-disciplinary in representing the intersection of agricultural, social behavioral, engineering and management sciences. World Bank noted, "A strategy for rural development must recognize three points viz. rate of transfer of people out of low productivity agriculture and related activities into more rewarding pursuits, lowering the degree of poverty and improving the quality of life.

We want to explore from the above evidence, the relationship between inequality, rural poverty and agricultural output growth in general and food in particular. The presupposition is that by reliance on agricultural growth alone without reducing land concentration, it would require a long time for most of the present generation of rural poor to rise



above the poverty line (Riad El-Ghonemy, 1993). Therefore, it follows that output growth is the prime aim of rural development where land distribution is highly unequal. In other words, where economic activities in agriculture and distribution of income are governed by different market behavior, no one can be blamed for inequalities and the condition of rural poor. In such a situation the problem of poor and poverty will become common and a way of life.

Therefore, rural development should *sensitize* and allow people to articulate their needs and feelings, make people capable of transforming here environment themselves into more congenial ones of their choice, help people to meet their basic needs, provide reasonable security, and ensure to encourage cooperation, collective problem solving, create self-respect and self-confidence and finally create nurture and rehabilitate their internal capacity to interest and innovate (Pandey, 1989).

To understand the rural transformation one must look into the origin of rural areas with respect to cultural heritage and its contact with other rural societies. This will further help to highlight the roots in contemporary institution, including, land tenure, kinship and agriculture because traditional land system in rural areas has proven to be quite stable and resistant to change to modernization. This can be attributed to a number of factors viz. locations and site of the villages, functional relation outside, socio-economic setting etc.

Hence, for rural development to be successful it should not only be environmentally and economically sound but also socio-culturally acceptable and within a capability of management and administration as well as existing in infrastructure. The problem of rural development is increasingly of interest to regional planners, agricultural scientist sociologist, geographers and policies planners. In the present day context agriculture is not generally treated as a dynamic element of regional

development because industry and tertiary sector grow much faster and generate more employment. There has been substantial decline of employment in agricultural sector.

The role and modernization of agriculture is mostly a social phenomenon. It opens the way for social transformation. Hence, agricultural modernization can lead to comprehensive transformation of rural society and rural settlement network. The modern agriculture can change the base of rural society and rural services (Volgyes, 1982). Agriculture development is infecting a major part of rural development and transformation. Agriculture has been the occupation of the major part of rural development transformation. Agriculture has been the occupation of the majority of people in rural areas and it will continue to be so for a long time to come.

India in its development policy has attempted to achieve economic growth with social justice. Villages are scattered and remote from urban areas and depend on land for their livelihood. Land for productive purposes is limited because of excessive pressure of population; considerable inequality in land holdings and exploitation over centuries without much input in terms of technical change in agricultural method. The Indian farmer is dependent largely on natural conditions for agricultural production. Rural societies as such are referred to as traditional. They have adopted agriculture from several thousand of years and have continued to use old techniques and skills. They prefer to adopt known rather than the unknown skill and do not easily adopt changes in agricultural practices.

The rural poverty and deprivation is reflected in their behavior, which is an attitude of helplessness because they see themselves as victims of circumstances or constraints, which are not under their control. Such an attitude has been brought on not only by their isolation but also

by natural factors such as drought, floods etc. The farmers in a village, therefore, see him as powerless because he has no control over his environment. Hence, he reverts to traditional values and believes in the super natural powers. Indian rural society thus operates under two constraints-one is direct such as limited resources like land, and other is indirect covering the cultural or social aspects of rural society i.e. traditional values. These together contribute to what is referred to as rural under development.

The emphasis of development policies and programmes have been to counter this by increasing the assets of rural people and to overcome traditional values which act as constants in promoting better health, sanitation, education and family planning. Thus any attempt at Integrated Rural Development must focus on increasing the productive capacity of rural poor and make provision for social services.

## **V-2: RURAL LANDSCAPE IN EASTERN UTTAR PRADESH**

Briefly the chief characteristic of rural areas of eastern Uttar Pradesh can be described as:

- (1) Favorable land- labour nexus
- (2) The continued threat of unemployment looming large on agricultural sector.
- (3) Phenomenally high rents reducing the share of operators of hired land.
- (4) Continued inflow of labour in the occupation due lack of alternatives, increases the consumption burden, shrinking the level below poverty land.
- (5) Daily wage workers are on the increase.

- (6) The combination of land scarcity, economically distress and demographic pressure together enhance problems.
- (7) Generation of alternative employment avenues by rural industrialization and rural construction.

### **V-3 MICRO-LEVEL DIMENSIONS OF RURAL DEVELOPMENT IN EASTERN UTTAR PRADESH**

Agricultural development programmes were undertaken. Those however had limited impact because of huge population. The highest priority was given to road expansion. Development in hydro-electric power and irrigation potential were the other components of infrastructural development. The experience in cereals grains development in areas has been encouraging. In such areas traditional subsistence farming continues and most of the households now supplement their meager incomes from seasonal migration to other more prosperous areas.

Over the years, there has been a qualitative and quantitative change in the rural areas of Eastern Uttar Pradesh. The improvement has been visualized in rural education, health, transport and communication, water supply, sanitation, rural housing, industries, energy, employment, labour and social welfare. Looking at the vast development in the rural areas, one can safely say that this was possible due to the government's strategic approach for rural development. Broadly the government's approach can be divided into two groups:

- (1) structural-functional, evolutionary and spontaneous
- (2) social -engineering, revolutionary or transformation

The farmer seeks to achieve rural development within the existing structure of any group or community or society. The later, is the result of the conflict between the old and new forces, which will lead sometime to bad or good results. The present study however has been undertaken according to the first approach assuming that efforts of the government would improve the living conditions of the rural peoples within the existing social structure. An attempt has been made to highlight the existing problems of poverty, fluctuation in income of the Eastern Uttar Pradesh, problems of unemployment, health, education, social and cultural services etc. and to examine the efforts of the governments in the given framework. The main tenets of rural development in Eastern Uttar Pradesh have been of integration and participation. Governments have so far not been able to integrate the methodologies and approaches of rural development in Eastern Uttar Pradesh. The study areas have vast diversities in physical, social and economic spheres. Due to this, people's participation in all developmental activities at all levels becomes necessary.

The experience gained during the last 20 years of planning has demonstrated that the decentralized planning based on growth pole theory and backed up by sound practices could produce positive results. The capability of decentralized planning on growth pole based on right proceeding and suitable structure will show spread effect for further development. Such growth poles for rural development have been evolved in agriculture, industries, education and health. A close examination of these centers is necessary to see the impact in regional development in general and rural areas in particular.

## **V-4: GROWTH POLE CONCEPT IN RURAL DEVELOPMENT IN EASTERN UTTAR PRADESH**

Decentralized planning in Eastern Uttar Pradesh in each sector of economic growth/development viz. agriculture, industries, education and health is based on particular location followed by the spread effect of development. Such locations due to their economic activities become self-sustaining to the point that growth is diffused eventually into the less developed places or centre. Such understanding is based on pure strategy of polarized development. Most of the locations of development in primary and secondary sector have become the base for multiplier mechanism in the transformation of rural areas and rural poor. These centers have been purposely selected and developed to show the maximum efficiency according to the given condition. Strategy of this kind by Uttar Pradesh government for rural transformation is designed to create integrated systems of protection and it is believed that it can be achieved through promoting a variety of spatial linkages.

In Eastern Uttar Pradesh the unequal growth is attributed to the poorly articulated spatial system. The underlying assumption is that the growing gap between the rich and poor in agriculture, industries or social services is rooted in unequal access to productive activities and social services. And the increasing accessibilities of the rural agricultural people to the growth centers will ensure equal development in all sectors of economy. The increasing accessibility and linkages among growth centers of development in rural areas is simply a process of widening opportunities for individual rural poor and social groups (scheduled cast/scheduled tribes).

## **V-5 GROWTH CENTRE IN AGRICULTURE FOR RURAL DEVELOPMENT**

Agriculture being the single largest industries and main occupation of the people of Eastern Uttar Pradesh holds an important place in the economy. It provides direct employment to about 75% of the total working population of Eastern Uttar Pradesh. For the development of the study areas in general, fanners (small and marginal) and weaker sections in particular, various growth centers have been developed by assessing the agro- climatic conditions in the state. Such centers have been developed under specialized schemes in agriculture which help the farmers directly and indirectly in many ways to raise their income.

### **V-5(a) MULTIPLICATION AND DISTRUBUTION OF SEEDS OR AGRICULTURE DEVELOPMENT FARM**

Under this scheme high yielding variety HYV of seeds are developed to meet the requirement of quality seeds by the farmers. In this regard many more growth centre have been developed to manage seed multiplication farnis, seeds stores etc. Farmers have been able to transform poor quality of seed with new high yielding varieties of seeds. These centres have brought both qualitative and quantitative progress in agriculture in the Eastern Uttar Pradesh in general and raising the farmer's income in particular.

### **V-5(b) FERTILIZER DISTRIBUTION CENTRE**

Fertilizer is the single main input, which help in increasing production to great extent. Cooperative federation distributes it at

the state level and by cooperative society and agro Industries Corporation at village level. There are so many centres in the Eastern Uttar Pradesh for effective distribution of fertilizers to the farmers.

### **V-5(c) MULTIPLE CROPPING CENTRES**

With increasing population, the demand for food is increasing year after year. For the department of agriculture the main concern is to optimize land use for raising the productivity per unit of land. In this direction one multiple growth centre was developed at Allahabad, Mirzapur, Varanasi, Ballia to provide information and helped to all farmers in the eastern Uttar Pradesh.

### **V-5(d) BEE- KEEPING DEVELOPMENT CENTRES**

The Eastern Uttar Pradesh offers potential for the development of bee -keeping because of large areas under agriculture, forest and horticulture. Honey due to its medicinal qualities has big demand in the country. As cottage industry it is least capital intensive with quick returns, thus making it possible to be adopted on large scale by the weaker sections of the farmers for getting additional incomes so as to improve their economic conditions. Government provides opportunities to promote the peoples at district level, block level, as well as village level to established bee-keeping centre at a subsidy rate. In addition, it has opened frontier for self-employment venture mainly for rural unemployed youths in the eastern Uttar Pradesh.



## **V- 6: STRATEGY FOR RURAL TRANSFORMATION**

In order to promote social justice and to improve the quality of the rural population, several sectoral plans have been launched from time to time. Most of the common problems face by the villages of Eastern Uttar Pradesh are poverty, employment, land reform and lack for basic amenities of life. In this study attention has been paid to identify the thrust areas of planning and its impact on rural transformation.

### **V-6.1: POVERTY ALLEVIATION**

Inspite of all round development in the economy in general and agriculture in particular, the incidence of poverty continues unabated. In rural areas where agriculture is the main source of livelihood in general, the incidence of poverty is more due to uneven distribution of productive resources and higher population growth. In the entire areas of eastern Uttar Pradesh, mostly famiers have small size of land. The small size holding is uneconomic and does not allow the farmers to produce sufficiently to support himself and his family in reasonable comfort. It does not provide enough employment to family labour and owned bullocks. Theoretically economic size of holding should be able to average family a satisfactory minimum level of living. This means an uneconomic farm is below the subsistence level.

#### **V-6.1(a) INCOMEWISE STATUS OF FAMILIES BELOW THE POVERTY LINE**

The main emphasis of rural development planning is to raise the income status of the people below the poverty line. Over the years this condition has not been improved even with the implementation of IRDP,

Jawhar Rozgar Yojna and special employment programmes. The majority of the peoples who are small farmers, marginal farmers, agricultural workers, non-agricultural workers, rural artisans were found to be living below the poverty line. A very high number of families with agriculture as their only source of income were living below the poverty line. Small and marginal farmers do not find their unit very productive. Moreover, they do not have enough financial resources to shift from agriculture to other productive occupation. Agricultural workers find renewal employment in agriculture. Hence they hardly get jobs outside these main economic activities. The non -agricultural workers get daily wage jobs in different sectors of economic activities, for raising their income levels .The rural artisans due to market problems do not get enough money from their traditional jobs. Sometimes they have to work as agricultural labourers during the crop season.

Looking at the condition of ever increasing poverty due to various reasons. The government has come up with special programmes to remove poverty from the study area. Poverty alleviation programmes have to be viewed in the wider perspective of socio-economic transformation in the state. The strategy to directly attack the poverty cannot be sustained if the overall growth is inequitably distributed. The programme for poverty alleviation should act in supplementing the basic plan for overall economic growth in terms of generating productive assets and skill as well as income for the poor. With this aim and view, greater emphasis should be laid on irrigation potential of dry land agriculture, adoption of special measures to increase productivity and income of small and marginal farmers and development of large and small industries. There are several beneficiaries, oriented and area specific alleviation programmes. The major poverty alleviation programmes being implemented are the Integrated Rural Development Programme (IRDP),

Jawahar Rozgar Yojna, social services and rural development, social welfare and nutrition etc.

#### **V-6.1(b): IRDP AND RURAL TRANSFORMATION**

The main objective of the programme is to raise the families living below the poverty line and create substantial additional opportunities of employment for them. All families below poverty line get benefit under this programme. The entire programme is locally based and planned. The benefit is given to the beneficiaries covering primary, secondary and tertiary sectors. Benefit is given in kind which include both the loan from financial institutions and subsidy from the government.

#### **V-6.1(c): TRAINING FOR RURAL YOUTH FOR SELF-EMPLOYMENT (TRYSEM)**

TRYSEM is an important part of IRD programme. The main thrust of the programme is to equip the rural youth in the age-group of 18 to 35 years and belonging to the target group with necessary skills and technology to enable them to seek self-employment venture. The training is imparted in a vocation of their choice either through a master craftsman or in an institution for a period of one year.

#### **V-6.1(d): DWCRA- PROGRAMME FOR RURAL DEVELOPMENT**

Development of Women and Children in Rural Areas (DWCRA) programme is also being implemented as a part of IRD programme. The

main objective of the programme is to increase the income of rural women of target groups by taking up income generating activities such as bamboo work, dairy development, carpet weaving, bee-keeping, handicraft and spinning. This programme is in operation nearly in all the districts of Eastern Uttar Pradesh.

#### **V-6.1(e): JAWAHAR ROZGAR YOJNA**

The main objective of the JAWAHAR ROZGAR YOJNA programme is to generate large employment opportunities for the unemployed and underemployed persons both man and women in the rural areas and creation of the productive community assets for the direct and continuing benefits to the poverty groups. The programme is being implemented through village Panchayat which is responsible for planning and execution of work under this programme.

#### **V-6.1(f): LOW COST HOUSING STRUCTURE**

The science and technology department has been helping villagers to construct low cost houses. Most of the houses has been constructed for the rural houseless or IRDP houseless families. Such houses for scheduled caste (SC) or scheduled tribe (ST) category were constructed under INDIRA AWAS YOJNA. Since the inception of this scheme houses of two rooms tenements have been constructed for different sections of the society. Similarly, help is also extended to poor families to renovate their existing units, as they are not worth living.

## V-6.1(g): DEVELOPMENT OF FISHERIES

The study area is bestowed with immense water sources. They have a large variety of fish. There has been no concerted effort to propagate the technology of pond fisheries. Rural youth are to adopt blue revolution in the village. It has helped many families in the rural areas in raising the living standards. Through this adopting blue revolution water table is also maintained of the area.

## V-7: INTEGRATED RURAL ENERGY FOR DEVELOPMENT

Rural energy problem is complex and challenging as these area based and need to be tackled in a decentralized manner. This is necessary as the existing energy consumption pattern has lead to wide spread deforestation and adversely upset the ecological balance. In order to reduce the dependence upon conventional energy resources and rectify the ecological imbalances, efforts have been made to evolve a mechanism for keeping the energy requirement in mral areas under contract review and to develop renewable and non-conventional energy resources to the maximum possible extent. To promote the rural energy programme various non-conventional devices have been evolved viz, smokeless chulha, portable chulha, energy efficient store, solar cooker, domestic solar, water heating system, pressure cookers, improved water mills etc.

## **V-8: SOCIAL SERVICES AND RURAL DEVELOPMENT**

The development of the nation is measured through the infrastructure it has laid down for the welfare of the people. It may be in the form of promoting social justice and improvement in quality of the rural population in particular through rural roads, primary education, rural health, water supply, sanitation, housing, nutrition and public distribution system. In spite of the physio- climatic variation from one region to another. Eastern Uttar Pradesh has made all efforts to improve the condition of the rural people, travel areas SC/ST etc. A brief review of the programmes shows that there is vast improvement in these categories in general and rural areas in particular.

### **V-8(a): RURAL EDUCATION FOR DEVELOPMENT**

Education is the most crucial not only to equip the new generation with skills so essential for earning a livelihood but also to create among them, an awareness of social and environmental realities. It includes in them scientific temper independence of mind and spirit. They are of paramount importance for them to become responsible citizens. Education is an integral part of development. There is at present a serious mismatch between the supply of educational resources and institution and its demand particularly in rural areas where the rate of absentees and drops out are very high. To take the facility of education near to the masses the state government is steadily expanding the educational infrastructure. The number of primary schools has increased for spreading primary education among the weaker section of the society.

Uttar Pradesh government has offered a variety of incentives such as scholarship, free text books, meal etc. for the same.

#### **V-8(b): RURAL HEALTH FOR DEVELOPMENT**

Delivery of adequate health care to people is the basic task for the rural people of the eastern Uttar Pradesh. This is a pre-requisite for the poor to become employable productive. Health delivery system is inadequate and ineffective. The burden on health programme has become more enormous with environmental degradation and its impact on physical life of the people. Health is also a very important component for the success of the family planning programmes. Therefore, it deserves special attention. Services such as improvement of environmental sanitation control of communicable diseases, health, education, family welfare, maternal and child health services are provided by the government. For rural health schemes, health guides are providing primary health care to the people of the state. The state government is making all efforts so that the distance traveled by the patient at present to get medical aid should be minimized.

#### **V-8(c): RURAL SANITATION FOR DEVELOPMENT**

Mostly people in the rural areas of eastern Uttar Pradesh have a tradition of answering their call of nature in open places. These open places are becoming scarce due to population pressure on agricultural land in the villages. As a matter of fact, defecation in open places sometimes causes various dangerous and has an adverse effect on health of the rural people. Hence there is a need for good quality of latrines for the rural peoples. Presently latrines are provided in rural areas under the

Rural Sanitation Programmes and Central Rural Sanitation Programmes. To bring this scheme closer to the areas, state government is financing the construction of latterines for the families belonging to SC/ST, Antyotaya and IRDP.

#### **V-8(d): RURAL HOUSING FOR DEVELOPMENT**

House is one of the basic necessities of mankind. The state government is giving subsidy for the construction of houses for landless workers in rural areas under Rural Housing Schemes. This housing scheme aims in fulfilling the housing needs of the rural poor people belonging to the SC/ST families as well as families covered without house. Under the Indira Awas Yojna assistance of Rs. 20,000 are given to the rural poor for the construction of two-room tenement through the village panchayat.

#### **V-9. SOCIAL-WELFARE AND NUTRITION**

Nearly women constitute half of the population and are critical to the production and social process of the economy. Their contribution and in the family as well as in economic development and social transformation is pivotal. They have been managing and supporting the survival systems, particularly in the case of the poor households constituting about 40 percent of the population.

The programmes for alleviation of poverty should strongly focus on development of women. The Government of Uttar Pradesh is diverting maximum resources towards releasing the productive and creative energies of rural women so that they become equal partners in the socio-cultural transformation of the society. With the above approach in view



the various programmes for social welfare of women, children and who constitute section of the society has been launched.

#### **V-9(a) WOMEN-WELFARE**

In accordance with the policy of the government of India and also to ensure social and economic upliftment of the women in the state. A women development corporation has been set up. More and more women are now taking to various types of jobs. The state government is providing safe accommodation to working women. For the security of deserted and destitute women, vocational training is provided to enable them to stand on their own feet. Moreover, in backward and interior areas sometimes-financial assistance is given to poor families to get their daughter married. Old age pensions of Rs. 150 per month are provided (social security scheme) to such persons who are 60 years and above.

#### **V-9(b): CHILD-WEFARE AND NUTRITION PROGRAMME**

Integrated Child Development Services scheme aims to bring down the infant mortality rate significantly and lay the foundation for overall physical, social, psychological and intellectual development of children. There are number of services provided under this scheme viz., non formal pre school education, supplementary nutrition, immunization, health check-ups and referral service and nutrition and health foundation.

#### **V-10: RANGE OF CHOICES FOR RURAL PEOPLE**

Uttar Pradesh has taken up a long stride in agriculture, industries, establishment of infrastructure (roads, education, health, energy,

sanitation etc). Organizational and institutional set-up, rural development, which has transformed the economy of the state in general and rural people in particular. The whole decentralized planning is based on raising and lifting poor people above the poverty line .The government has made all efforts in changing the primary activity based economy to secondary and tertiary based economy. People in Eastern Uttar Pradesh now have many options in economic pursuits. The range of choices is widening in every sector of economy. Additional avenues are being generated through rural development programmes. It has helped the state in many ways viz, there is deduction in migration of people in young age group, increased in traditional occupation and rise in economic status of the people. Some of the choices of people can make are listed below:

#### **AGRICULTURAL SECTOR**

- Multiplication and seed development farms
- Agricultural implements

#### **ANIMAL HUSBANDRY SECTOR**

- Dairy development
- Poultry
- Piggery
- Sheep rearing
- Fisheries

#### **BUILDING CONSTRUCTION**

- Mason and bathroom fitting
- Brick making
- Painting and polishing
- Electric fitting

## **CLOTH PRODUCTION**

- Silk
- Sewing
- Mattress making
- Carpet weaving
- Blanket weaving

## **INDUSTRIAL BASED**

- Plastic
- Agarbatti
- Candle making

There can be a long list of such opportunities existing in the Eastern Uttar Pradesh .It is however important to see how these services can be utilized by the individual in improving his socio-economic status. The state government on the other hand helps rural people in a variety of ways to take up rural based enterprises to improve their income levels. In a nutshell, the condition of rural people over the years has improved. Much has been done and still much more needs to be done. There is still need to coordinate the plan for the people in proper way. People have very little information about the programmes and policies implemented in their areas.

## **V-II: ORGANISATIONAL AND INSTITUTIONAL FRAMEWORK**

Organizational and institutional framework is important because it creates administrative links among people in the policy making process. These linkages are the central elements in the successful strategy and studies in development would suggest the same conclusion. Those cases in which there was more organization reaching down to the local level accountable to the local people and involved with rural development functions have accomplished rural development objective more successfully than those with less rural organizations. Rural development related organization has a long list of hierarchical order for smooth functioning.

**STATE LEVEL**

**STATE DEVELOPMENT  
COUNCIL**

**STATE PLANNING  
BOARD**

**DEVELOPMENT COMMISSION**

- Secy.rural development.
- Secy.panchayati raj
- Secy.agricultural department
- Secy. Animal husbandry department
- Secy.corporation department
- Secy.rural and small scale industries
- Secy.public health and family welfare including primary health centre

Secy.welfare SC/ST

Secy.public work departmeni

Secy irrigation and ground water department

Secy education including primary and adult  
education

Secy social and women welfare

Secy forest

Secy. Rural water supply and sanitation

## DISTRICT LEVEL

General standing comittee	Finance and audit committee	Planning committee	Anti poverty programme comittee	Other special
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## DISTRICT DEVELOPMENT COMMISIONER

District planning cell	District level officer	District anti poverty cell	District administration officer	District finance and accounts officer
District planning officer	Agri.dept. Animal husbandry Fisheries Cooperative dept	Project officer and other supporting staff	Supporting staff	Supporting staff

Supporting staff  
social welfare  
education  
forest  
public work  
rural industry  
rural water  
sanitation

**BLOCK LEVEL**

**ASSISTANT DEVELOPMENT OFFICER**

BLOCK	MEDICAL	VETERINARY
DEVELOPMENT	OFFICER	DOCTOR

**EXTENSION OFFICER**

Agri corporation	Health visitors M/F	
stockman		
Panchayat	Sanitary Inspector	Stockman
Rural and small scale industry	Midwives	Messenger
Education and social welfare	Compounder	
Social forestry		
Family welfare and nutrition		

JR.ENGINEER

Progress assistant

Other

program implementing

gramsevak

staff

sectorial staff

The rural developments in Eastern Uttar Pradesh are based on the development of primary and secondary activities, which have provided multiplier mechanism in the transformation of rural areas in general, and rural poor in particular. Eastern Uttar Pradesh provides ample scope for the establishment of industries based on agriculture, forest, food processing, and electronics. Many centers have come up in the state with efforts of state and individual. Such an institutional progress has been instrumental in positive transformation of areas under food grain crops and vegetables. Therefore the share of income from agriculture has increased and the people and the number of families below the poverty line has declined.

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# CHAPTER-VI

## **SOCIO- ECONOMIC STRUCTURE AND RURAL TRANSFORMATION**

### VI-1: CONCEPTUAL FRAMEWORK

Transformation is a process of change in every aspect for a given period of time of a particular phenomenon. Urbanization is an integral part of the socio-economic development that has shaped cultures. It is a physical phenomenon. According to Rama chandran (1989) the process of change of the villages may be viewed from two opposite sides:

- 1 Changes in land uses within the village i.e., village settlement as well as the surrounding land, which forms part of revenue village.
2. Changes in the social and economic life styles of the people of the villages.

As a consequence of economic and speculating forces unleashed on villages in the periphery of metropolis, massive transformation in their physical form and social-cultural setup takes place disrupting their old age- healthy relationship. The social organization of such villages experience considerable changes as they adopt various urban habits and occupation following the loss of agricultural land. Due to lack of education, awareness and community development programme, the villages are not able to cope up with the fast pace of change similar to the urban way of life.

The transformation is determined by the different factors:

- Means of transformation and accessibility like road and rail links.

- Physiographic factors, which determined the extent of demand for a particular land
- Lack of development controls on village land
- Planning approaches and systems in practice or the lack of it and
- Policy of development

Rural activities are primarily based on agriculture as related functions. As a surrounding sub-urban development approaches towards the villages, its structure starts getting changed, land sub-division and occupational shift from agriculture to other secondary and tertiary activities takes place. It is believed that there might be some variations in different villages depending on their location in relation to the city. The basic purpose of this chapter is to review the broad pattern among 500 respondents, of 30 selected villages interviewed in the study with respect to their personal and family attributes.

## **VI-2: PERSONAL AND HOUSEHOLD CHARACTERISTICS OF RESPONDENTS**

The socio-cultural factors around them largely affect the socio-economic life styles of the people. Human psychology and behavior play significant role in the socio-economic transformation. It affects the choice of occupation, adoption of innovation, level of religiosity, attitude to family welfare programme, education, jobs of the children, social mobility, housing condition, status of girl child, level and intensity of crime prevalent and so on. Several personal factors like age, education, cast, family size, occupation, place of residence etc. are intrinsically related with each other and reflect on the general life style and behavior. A lot of variations are bound to occur among individuals in these

parameters. In this chapter, an effort has been made to asses the homogeneity and dissimilarities in the personal and family attributes of these 500 selected respondents of the study area with reference to the selected parameters.

**VI-2(a): AGE COMPOSITION**

The age composition plays an important role in the adoption of new ideas and practices. The younger generation accepts new ideas and practices very quickly, whereas at an advanced stage people find it difficult to change from old age practice and resist to the adoption in any changed life style patterns.

With this view all 500 respondents were arranged according to their age in ascending order and finally divided into four categories as shown in the table 6.1

**Table 6.1**  
Age composition of respondents

Age group	Age range	Number of respondents	% of total
Young age	< 30 years	70	14
Lower middle age	30-39years	132	26.4
Upper middle age	40-49 years	148	29.6
Old age	>50 years	150	30.0
<b>Total</b>		<b>500</b>	<b>100.00</b>

Source: Compiled by the researcher

It is interesting to note that only 14% of the totals are below 30 years of age. One fourth that is 26% of the total respondents belong to the lower middle age that is 30-39 years of age. Around 60% of total respondents belong to the upper middle age and old age. 148 respondents out of 500 belong to 40-49 years while 150 respondents accounting 30% of total respondents belong to old age group. It shows that social values and norms dominate the agricultural activity also. The father or elder brother, by virtue of their being older in age, is not only the leader of family but their decisions are final in day to routine including the agricultural activities.

## **VI-2(b): EDUCATIONAL STATUS OF RESPONDENTS**

The role of education is immense in bringing about social-economic transformation. It is one of the chief instruments through a society socializes with its members and brings desirable changes in the social life of its people. In fact, education is the aggregate of all the processes by means of which a person develops abilities, attitudes and other forms of behavior of positive values in the society he lives or it is a social process by which people are subjected to the influence of selected and controlled environment so that they can attain social competence and optimum individual development (bear, 1947). Thus, education influences the course of behavior of both society and its individuals.

In order to ascertain the educational status of the individual respondent's questions on formal and informal education of respondents were included in the questionnaire. Different answers varying from being illiterate to post-graduate were received which were neither comparable nor could be aggregated. Hence a very judicious scoring scheme was evolved and shows the categories of educational status of respondents.

**Table 6.2****Educational status of the respondents**

<b>Category</b>	<b>Score Range</b>	<b>No of respondents</b>	<b>% of Total</b>
Illiterate	0.0	162	32.40
Less Educated	< 1.5	200	40.00
Moderately Educated	1.5-2.5	<b>88</b>	17.60
Highly Educated	2.6-3.5	<b>40</b>	08.00
Very Highly Educated	>3.5	<b>10</b>	02.00
<b>Total</b>		<b>500</b>	<b>100.00</b>

Source: Compiled by the researcher

The educational status of the respondents was generally poor. 162 out of 500 were illiterate i.e. 32% and the little less than half i.e. 40% were less educated. Around 17% with 1.5-2.5 score range are moderately educated. Only 8% i.e. 40 out of 500 respondents were highly educated and only 10 out of 500 respondents i.e. 2% were very highly educated with college and Universities i.e. graduation or post graduation or Doctor of philosophy.

**FAMILY SIZE OF RESPONDENTS**

The rural societies of the orient are generally large in size primarily being agrarian in nature. Parents generally live with their married sons and families. By and large, it is the family, instead of the individual, which is the unit of social action. The family as single entity influences the thought and actions of the individual members in the family in a large measure. The size of a family plays an important role in forming the

personality of individual and his decision-making abilities and pattern. It is the entire family, which has a major role in deciding the type of occupation to be adopted as well as in the process of its development. Therefore, the total members of selected respondent's family were enumerated during the course of the field work. On the basis of the total members of the house hold, families were arranged in ascending order and finally grouped into five categories, as in the given table.

**Table 6.3**

Family size of respondents

Category	Size of family	No. of respondent	% of Total
Small size	< 5 members	100	20
Medium size	5 to 9 members	290	58
Large size	10 to 14 members	70	14
Very large size	15 to 19 members	32	6.4
Extremely large size	> 20 members	8	1.6
<b>Total</b>		<b>500</b>	<b>100</b>

Source: Compiled by the researcher

A critical review of the summary table showing the member of families in each village falling in different types of families indicated that there are a lot of spatial varieties in it. Around 20% of families that is 100 out of 500 are of small size with less than five members in the family, 58% of all the families of respondents belong to medium size with 5 to 9 members in each family. Around 80% of the total respondents of the families are of medium sized. Large size families belong only to 70 respondents i.e. 14% while 6.4%) respondents i.e. 32 out of 500 have very

large family sizes. Only 8 families are extremely large in size. Thus, there is no clear spatial pattern in size of families. Family size is broadly related to the economic condition of the respondents. Generally more well off family of larger in size while poorer families are smaller in size. The reason behind is that, in villages the basic property is land, which is an acute shortage with respect to it's per head supply. The small size of holding is detrimental to fanning and over all development of agriculture. So the families, which are joint and where the land is not divided, are generally economically well off. On the other hand, poor, illiterate and landless agricultural labourers generally quarrel on small issues and divide the house.

### VI-3: FARMING ATTRIBUTES

The physical attributes of farming including a variety of components such as the size of holding both actual and operational, sources of irrigation, dynamics of cropping pattern have been analyzed to find out variations over the time period. India like agricultural countr>', where village is the unit of studies, the ownership of land is an important indicator of a person's socio-economic status. Here again land is taken as the sole indicator of a person's socio-economic conditions. Hence both actual land size holding and the operational sizes of land holdings are discussed here:

#### VI-3(a) ACTUAL SIZE OF LAND HOLDINGS

The actual size of land holding includes all the entered in the name of an individual in government records irrespective of the fact whether he



cultivates it or not. In this study, agricultural land owned by an individual has been considered, and on this basis the selected respondents have been classified.

Table: 6.4  
Actual size of land holdings

Category	Range (acres)	No. of respondents	% of total
Landless	-	129	25.80
Marginal size	<2.50	135	27.00
Small size	2.50- 5.00	105	21.00
Semi medium size	5.01- 10.00	88	17.60
Medium size	10.01-25.00	28	5.60
Large size	>25	15	3.00
<b>Total</b>		<b>500</b>	<b>100.00</b>

Source: Compiled by the researcher

The responses got during the survey clearly reveal the poverty of individuals. Nearly twenty six percent of farmers were reported to be landless. They work as labourer either agricultural or otherwise. In some villages like Karma of Disst. Ghazipur, fifty percent of respondents were landless while in Kusumpur a very backward and undeveloped village, eleven out of fifteen respondents were landless i. e. seventy three percent.

There are 27 percent respondents who fall into the category of being marginal farmers with less than 2.50-acre land in possession. So if landless and marginal farmers are added up they are closed to 53% of the total respondents. Marginal farmers are also found in all the thirty villages surveyed and their percentage in these villages varies. After landless farmers the next big group comes forth is that of small and semi

farmers i.e. small farmers with 2.50-5.00 acre land and semi medium farmers with 5.01-10.0 acres of land. Together they account for around 39% of total respondents. In Dildamagar 50% of respondents were small farmers. However, generally the percent of small farmers in each village varies between 20 -40 %. The same holds true for the semi - medium farmers also. Only 6 % of total farmers belong to medium size of land holding i.e. 10.01- 25.00 acre it means 28 farmers out of 500 respondents. The numbers of farmers with more than 25.00 acres of land is only 15 out of 500 making it to be 3 % of total respondents.

### **VI-3(b) OPERATIONAL SIZE OF LAND HOLDINGS**

In agricultural systems besides actual size of land holdings, operational size of holdings determines the agricultural income of farmers. Very often the owners of land, who are not in the position to cultivate themselves gives their lands to the actual tiller on various terms and conditions. So, it is the total areas being cultivated by the respondents, which matters more than the land registered on his name. So, the operational size of land holdings of each respondent is worked out in this study as mentioned in the chapter on research design and methodology. After working out the operational size of holdings, they have been arranged in ascending order and finally classified into five categories as in case of actual size of holdings.

**Table 6.5****Operational size of land holdings**

<b>CATEGORY</b>	<b>ACREAGE RANGE</b>	<b>NO.OF RESPONDANTS</b>	<b>PERCENTAGE O TOTAL</b>
Landless	—	100	<b>20</b>
Marginal range	<2.50	<b>90</b>	<b>18</b>
Small size	2.50-5.00	120	<b>24</b>
Semi medium size	5.01-10.00	130	<b>26</b>
Medium size	10.01-25.00	<b>45</b>	<b>9</b>
Large size	>25.00	15	<b>3</b>
<b>Total</b>		<b>500</b>	<b>100</b>

Source: Compiled by the researcher

The number of landless labourers in operational size of holding has reduced 100 as against 129 in actual size of holdings. This means, a drop of 6 % from 25.8% to 20% because some respondents have taken land on lease basis from the owners of land. There is a decrease in the percentage of marginal farmers from 135% to 90 %. Men from these villages worked in the cities either on the shops or bus drivers, conductors i.e. some non - agricultural occupation. As a result they earn in both ways- they get a fixed salary by a job in the town, city and agricultural income by leasing of land.

There is lot of reshuffling in the number of respondents in various categories as against actual holdings. There is an increase in the number of small size farmers from 105 -120 which accounted for a net increase of 3% from 21% to 24%. Such phenomenon is taking place more on the villages of radial nature i.e. road side villages such as AQalpur, Gahmer, Katoli, Bahuara, Karma, Kusumpur, Salempur, Tajpur and many others.

The medium size farmers also reported an increase in number i.e. 17 respondents were added to this category making it to 45. In the category of large size holdings, there is a constant position. In 10 villages no change in land holdings pattern is reported. The pattern is just the same as that of actual size of land holding. The villages are Gopinathpur, Jalalpur, Raghuwarganj, Sanchuan, Katoli, Kabirpur, Mendnipur, Lolahe, Bahuara, Kusumpur.

**VI-3(c) DYNAMICS OF CROPPING PATTERN**

To the question, where there is a change in the cropping pattern 50% of the respondents reported that it has changed where as 150 out of 500 respondents accounting to 30 % says that it has not changed. About 20% respondents gave no answer to this question. This is under stable since 39% of farmers are reportedly landless and hence they are not in the position to tell what they feel about the cropping pattern. About 90 respondents out of 500 believed that 15% of the agricultural produce has increased 75 respondents i.e. 15% believed that it has decreased and 110 respondents i.e. 22% believed that it is the same. Around 45% of the total respondents did not answer to this question posed.

**Table 6.6**  
View of the respondents

Response	Total number	Percentage (%) of total
Increased	90	18
Decreased	75	15
Same	110	22
Not answered	225	45
<b>Total</b>	<b>500</b>	<b>100</b>

Source: Compiled by the researcher

Since the sources of irrigation are meager, the fanners depend on rainfall for supply of water to the fields so, the yields of crops depends on it. The fanners who have introduced or who use modern technology in agriculture and whose socio-economic condition is good have reported an increase in the yield position. At times the answers are true while at other times they are merely out of pessimism.

**VI-3(d) LEVEL OF INNOVATIVENESS**

Agricultural productivity is very much associated with the level of exposure, apart from other social-cultural and techno-economic factors, which are reflected in the level of innovativeness of the respondents. The influence of neighbouring town and cities may also increase the level of innovations. In order to asses the level of innovativeness among respondents -various questions relating to agricultural implements, improved varieties of seeds, chemical fertilizers, use of insecticides and pesticides were included in the questionnaire. In order to bring all the innovations and their associated variations in their adoption at uniform level, a scoring scheme has been adopted. The scores of individual respondents are added together in order to get his final score. Finally, on the basis of these total score values, the respondents have been grouped into five categories viz. least innovative, less innovative, moderately innovative, highly innovative and very highly innovative which may be seen in table 6.7.

**Table 6.7**

## Level of innovativeness of respondents

<b>Category</b>	<b>Score range</b>	<b>Total number</b>	<b>Percentage of total (%)</b>
Least innovative	<1.50	120	24
Less innovative	1.50-2.50	<b>90</b>	18
Moderately innovative	2.51	155	31
Highly innovative	5.01-7.50	<b>80</b>	16
Very highly innovative	>7.50	55	11
<b>Total</b>		<b>500</b>	<b>100</b>

Source: Compiled by the researcher

The distribution of respondents is quite uneven among the various levels of innovativeness due to variations in socio-economic conditions. 24% of respondents of the total belong to the least innovative category. Almost 18% of the total respondents are less innovative. Together they account for a substantial percentage i.e. 42%. A substantial percentage of respondents are either landless or marginal farmers. The agriculture practice of these people is only for with no money in hand and poor agricultural produce, they employ lesser innovations and thus get trapped in vicious circle. A substantial percentage of respondents are moderately innovative. These respondents are the one who use good quantities of fertilizers and pesticides and hire tractors and harvesters etc., very few respondents in the study areas were found to possessed tractors of there own. People possessing big harvesters of his/her own are still lesser.

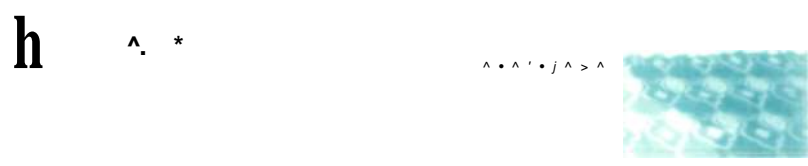
Although harvesters are brought from other developed regions to the villages on rent. Only 16% of the total respondents were reported to be highly innovative. Only 11% of respondents i.e. 55 out of 500 were very highly innovative. These are the peoples with their own harvesters, tractors and other agricultural implements. They also use regularly fertilizers, insecticides and pesticides and new varieties of seeds in sufficient quantities.

#### **VI-4: SOCIAL ATTRIBUTES**

In order to assess the socio-economic transformation, it is essential that the social attributes of the residents of villages be assessed. Among various social parameters, educational levels, attitude towards marriage, attitude towards family planning, religiosity and social mobility have been considered in this study. Since status of the woman in a society is a good indicator of the level of social progress, straight forward questions regarding the status of girl child were included in the study. With the change in the socio-economic lifestyles, the number and nature of criminal activities also change; hence an effort has been made to understand all these forces underline the socio-economic pattern of the villages.

##### **VI-4(a): HOUSING CONDITION**

Housing condition is a true reflection or true indication of the socio-economic condition of the people. The house does not necessarily be big but if the house contains basic amenities of water supply, sanitation, electricity and separate kitchen, toilet, bathing space and animal shed, the housing condition becomes moderate to good. Several



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Fig.6-1



questions were included in the questionnaire which seek to get the information about number of rooms, number of storeys, kutchha -pacca, basic amenities present or not whether there is a separate animal shed or not and what are furniture possessions of the respondents. Each variable from the above has been given some score in order to bring them to unifomi level and then the total scores are grouped into three categories- poor, moderate and good. 60% of the total respondents have poor housing condition, 22% of total respondents have a moderate living and 18% of total respondents have good living.

**Table 6.8**

Housing condition

Category	Score range	Number of respondents	Percentage of total (%)
Poor	<4.50	300	60
Moderate	4.50-6.00	110	22
Good	>6.00	90	18
<b>Total</b>		<b>500</b>	<b>100</b>

Source: Compiled by the researcher

Very often the interviewer felt that the respondents were not very willing to give information about their housing condition. The main reason was that recently survey for detemiining poverty line was held and many people were omitted from it on account of possession of coolers and television sets. One thing was interesting to note that nearly all households possess television sets, music systems, electric heaters and fans. Radio is supposed to be out of date by them. Again housing condition was very clearly seen to be related economic condition. Most of

the houses were single room, dwelling with the same room serving as the kitchen and bedroom, animals is possessed were tied out side the house. A small temporary bathroom made in the backyard of house and is washed on the common hand pump or public tap depending upon the facilities available in the village. All houses possess electricity connection assured by the Uttar Pradesh government, even if some houses do not possess it, illegal theft is a common practice. Generally a large percent of families of respondents were seen to be cooking food on electric heaters for which they never pay. Cooking fuel is a major scarcity in this region. Fuel wood is scarced, kerosene is expensive and LPG connections are limited, hence electric heaters are the best options available to the people here.

Most of the houses are kutchha -pucca mixed with a single storey. Each village possesses around 7 to 8 double storey houses. These houses generally have at least a two-wheeler in their house if not four-wheeler. Such farmers reportedly have at least one small house in niral areas for their children stay and study in private school. A medium size farmer has a 3 to 4 rooms house with a separate baithak, where a sofa set and chairs and table are kept there. If a farmer does not posses these, he intends to buy them as soon as possible.

#### **VI-4(b): LEVEL OF EXPOSURE TO MASS MEDIA**

Mass media plays an effective and important role in diffusing information. Especially with the presence of television sets in nearly every house there is no peace or type of information, which the villagers are not acquainted with. Five forms of mass media communication levels have been considered here. They have television, radio, cinema, newspaper and magazines. A separate section including several questions

on each media was included in the questionnaire. The infomiation obtained from each respondents was varied and of different nature.

**Table 6.9**

Level of exposure to mass media			
Category	Score range	No. of respondents	%age of total
Less exposed	<0.20	100	20
Moderately exposed	0,20-0.50	150	30
More exposed	>0.50	180	36
Unspecified		<b>70</b>	14
<b>Total</b>		<b>500</b>	<b>100</b>

Source: Compiled by the researcher

Television is the most favorite means of mass media .Nearly 80% of respondent's posses a black and white television sets. Although, cable connections was not found in any village. All channels of Doordarshan are peoples favorite. Programmes on sports, religious and mythological programmes are the most favorite. Agricultural related programmes are not very popular among farmers.

The role of radio now seems to be insignificant. The tape recorders have taken it up. Around 30% of the respondents possessed decks and tape recorders. The villagers are mostly fond of cassettes of religious songs. Cinema is another very popular means of mass communication. Most of the respondents go with their families to watch cinema but the craze has now faded out ever since televisions sets invaded the houses. Nearly 20% of the respondents go to movies frequently i.e. 2 -3 times a month. Around 22% go once in 2-3 months and 48% go very seldom may be once in a year or more time. Apart from televisions sets acting as major deterrent, social-economic conditions, the location of picture halls and the mobility of farmers play an important role.

Newspaper is another and one of the most important means of mass communications. The percentages of newspapers readers were very poor in villages -mainly due to poor literacy rates and also non-availability of newspapers. It is exactly not the non-availability of newspapers but lack of purchasing habit among the farmers. Nearly every village gets newspapers 8-10 in numbers. Mostly preferred to read newspapers at the tea stalls or neighbours place. Again political news items, agriculture related news and any other news of crime interest people. Hardly 5% of total respondents purchase of their own. The information obtained regarding exposure to mass media is varied and complex. In order to make them comparable, a judicious scoring scheme was evolved. Total score of each respondent were considered in order to find out their level of exposure to mass media. 35 respondents out of 500 i.e. 7% largely landless or agricultural labourers with very poor social-economic conditions have connections with any means of mass communications. They were of course aware of the existence of these but could not effort them. 20% respondents were less exposed. Around 30% respondents were moderately exposed and quite a large percent i.e. 36% were more exposed to mass media.

#### **VI-4(c): RELIGIOUSITY**

It is assumed that with the increasing urban influence, the degree of religiosity goes on decreasing among the people. Higher organized way of life would lead to reduction in the strict following of religious rules. The responses which are got during the survey also, a reinforce this assumption. Various questions pertaining to religious practices of the respondents were included in this section.

Table 6.10

.level of reliogisity

Religious category	Score range	No. of respondents	Percentage of total ;
Least religious	<1.25	140	28
Less religious	1.25-1.50	120	24
Moderately religious	1.51-1.75	125	25
Highly religious	>1.75	115	23
Total		500	100

Source: Compiled by the researcher

A scoring scheme was devised as mentioned to bring ail the responses to uniform level and categories of these responses were made in an ascending order. 28% of the total respondents belong to the category of being least religious. 24% of the total respondents belong to the less religious. 25% of the total respondents belong to the category' of moderately religious and 23% highly religious. Almost 28 percent of the total respondents belong to the category of being least religious. Around seventy five percent respondents said that they follow religious rules in day to day life partially. Only eighteen percent said that they follow the rules fully and seven percent respondents said they do not follow these rules at all. Most of the respondents being farmers said they do take up special worships at the time of sowing and cutting of crops. Around sixty percent respondents do not match the horoscopes of their children at the time of marriage. Again a substantial percent of respondents did believe that the misfortunes of life are a result of past *karmas*. All big farmers or people with good socio-economic conditions had a separate place of

worship in their house while the poor or middle level respondents go to public temples for worship.

**VI-4(d): ATTITUDE TOWARDS MARRIAGE**

Marriages in Indian society are one of the best parameter to analyze the social transformation; modernization and urban influence get clearly reflected in these. The age of marriage both for boys and girls, the expenditure during the marriage as dowry and otherwise, the changes in food served, decoration, the choice of profession of the groom, the choice place in terms of town, city or villages get affected with the change in times. Several questions were included in the questionnaire, which tries to type attitude of people towards the above-mentioned attributes. In order to analyze the changing trend over time period respondents were asked to tell what was the scene 5 years back and also 10 years back. Regarding the age of marriage for boys and girls-a marked change is visible.

**VI-4(e): ATTITUDE TOWARDS BOYS MARRIAGE**

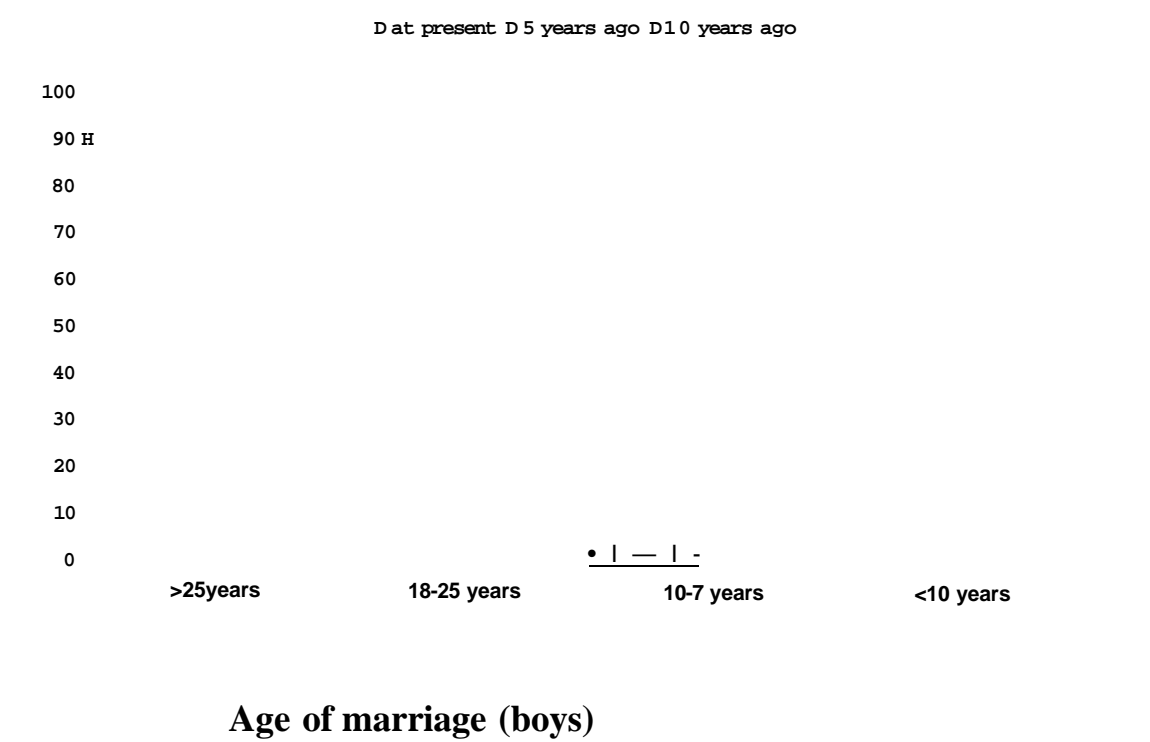


Fig.6.2

Around 88 % of the total respondents think that boys should get married between 18 -25 ages, while 8 % respondents believe that only after 25 years of age and 5 % respondents considered 10-17 years of age suitable for boys to get married, not a single respondent of the view that boys in recent times should be married before attaining at age of 10 years. Although 60% respondents reported that boys used to be married in the age group of 18-25 years.

(f): ATTITUDE TOWARDS GIRLS MARRIAGE

Age of marriage (Girls)

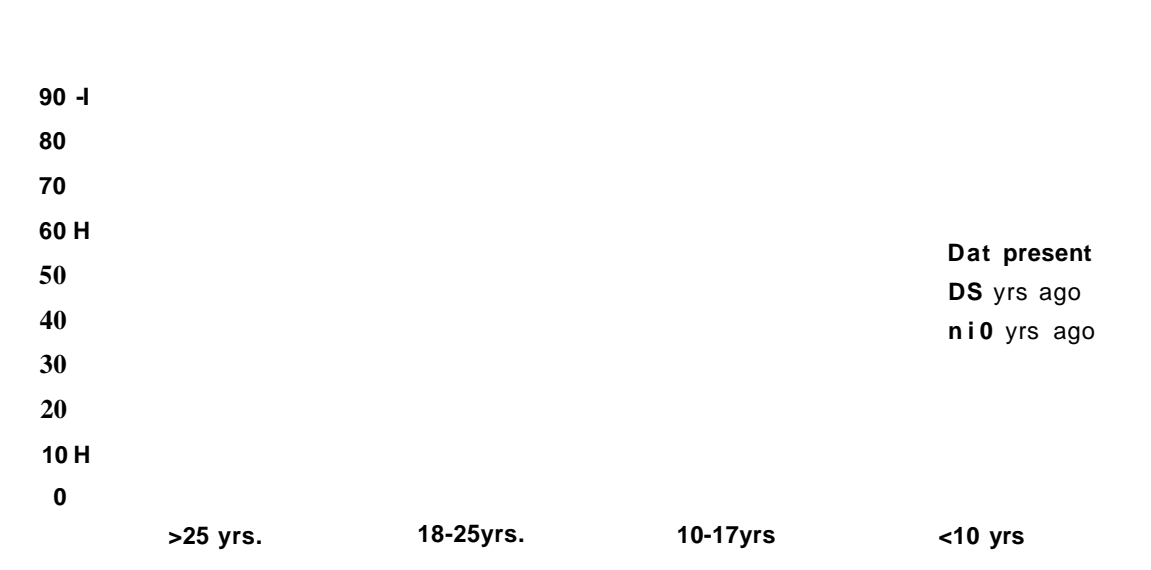


Fig 6.3 required

As regards the age of marriage for girls- 18 to 25 years is considered suitable by eighty percent respondents, only while eight percent says, it should be after twenty five years of age and eleven percent said it should be done between ten to seventeen years, while for boys only four percent respondents considered this is to be suitable for marriage. As regard the change in attitude over five years and ten years time period the transformation is remarkable. Five years back only 17.5% respondents considered 18-25 years of age group suitable for girls to get

married and 10 years back the percent was remarkably low i.e. 3%. Thus, the impact of education, exposure to mass media and changing life style pattern is clearly evident in the responses given during the survey. It is interesting to note that socio-economic conditions of the respondents had little to do in this respect.

As regards the place of marrying their daughters, nearly half of the total respondents are comfoilable in villages. They want the groom to be living in a village. Only 10.6% consider a town suitable for their daughters to live and quite a sizeable number of respondents consider cities suitable for their daughter to be married in. Only 3.75% respondents said that place was not a criteria for a selection of groom basically the family and boy should be good whatever place they might be residing in. But cities do emerge out to be a definite place of choice among the respondents.

Inter- caste marriages are definitely not a choice of villagers. Here 81.25% said they do not like an inter-caste marriage and 18.25% said they do not mind it, if the boy and family are good, do not demand dowry and the boy is educated.

Table 6.1  
Preference of profession for marriage

Profession	No. of respondents	% of total
Your own protection(agriculture)	140	28
Service	255	51
Business	60	12
Others	45	9
<b>Total</b>	<b>500</b>	<b>100</b>

Source: Compiled by t le researcher



Agriculture and service are two important occupation preferred by respondents for to be grooms of their daughters. 28% think boys with agricuhural practice suitable while 51% think a boy with some service to be better suited. At times, the unpredictable nature of agricultural returns deters them as against a fixed amount of salary got by people in service. Business is the next occupation of choice i.e. 12% respondents and only 9% respondents thought that occupation of a bo> cannot be the criteria for marrying their daughters.

**VI-4(g): FAMILY PLANNING AWARENESS**

A very high percent of total respondents were aware about the family planning programme. About 89% said that they were aware and only 11% respondents said that they are not aware about it. Despite awareness there are 17% respondents who do not practice it while 83% said they practice family planning measures. It was interesting that 48% respondents said that wife should adopt these measures while only 42% respondents believe that husbands should adopt these measures. Almost 10% respondents believe either of the tw o could adopt these measures. These figures clearly indicate that the society is still male dominated. It cares more for the males than the females.

**Table 6.12**

	No. of respondents	j % Of total
Anyone	50	1 '0
Husband	210	! 42
Wife	240	1 48
<b>Total</b>	<b>500</b>	<b>! 100</b>

Source. Compiled by the researcher

Generally, in these villages, it was found that women go in for operation. Very few men get convinced about using these measures but expect their wives to follow them. Although the network of health services is very strong. Around 76% of respondents are agree with that the small family is happy family and about 24% were doubtful as to what number of family members got to do with the concept of happiness. They believe -larger the number of children greater happiness added to it, is the concept that children are God's gift what can we do about it.

**Table 6.13**

Is small family a happy family?

<b>View</b>	<b>No of respondents</b>	<b>Percentage of total</b>
Yes	380	76
No	120	24
<b>Total</b>	<b>500</b>	<b>100</b>

Source: Compiled by the researcher

Despite the awareness, 75% respondents were of the view that family planning operation should be done after three children and 23% thought four children to be a suitable number, so 9% in total believe family planning measure should be adopted after three or four children only. Only 1% of the total respondents believe, it should be adopted after two children and less than 1 percent said after five children. Wlien asked whether they would adopt family planning programme even if they do not have a son only 7% said "yes" and 93 % said they are in favour of adoption only when they have a son.

Thus, it was believe that greater the impact of urbanization and changed life style pattern coupled with greater awareness more and more

people would be convinced about the adoption of family planning measures. The reality is a little different since greater percent of people are farmers and in an agrarian oriental society, the importance of a male child is paramount in terms of carrier of the family and the future owner of landed and other property. However a poor person is, he feels a little secure and powerful if he has son-daughters are like accompaniments in the process of having sons.

#### VI-4(h): STATUS OF THE GIRL CHILD

It is believed that status of women in society is a true representative of and a good indicator of the level of civilization of a society as noted above. Male child is a more preferred child even in this study area, but it in no way means that girls have a deplorable condition. Around 96.87 percent respondents were favour of sending their daughters to school, only 10 respondents who were extremely poor said they do not want to send them to school. It was very encouraging to know that all children, whether boys or girls go to school either public or private depending on the economics condition yes little discrimination is done in a way that if affordable- boys are sent to the English speaking private school while girls are sent to the government school where no fees is required, uniform and book are not required to be bought.

Profession for daughter

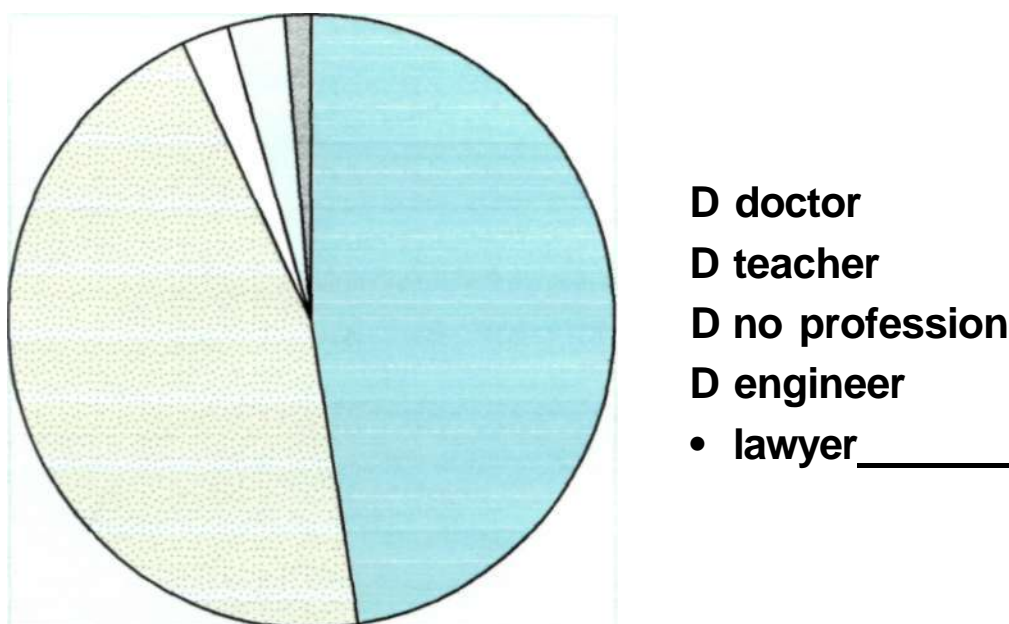


Fig-6.4

Almost 93 percent respondents their daughter wanted their daughter to go in for very noble professions like teaching and becoming doctor. Around 47.5 percent wanted their daughters to be doctors and 45.6% wanted them to be teachers, around 2.5 percent clearly wanted their daughter to follow no profession and simply become a house wife. There were around 13 to 15 respondents each, out of 500 for professions like engineer, civil servant and lawyer. This seems to be quite a good change where earlier people never considered woman to be worthy of any such profession are now thinking of making choices.

Although till now in any of the villages nobody reported about any girl who had accomplished these position but definitely if these feelings exist at the thinking level they would soon be transformed to the practical level. At the most people have their daughters or daughters in law as teachers but very commonly in surveyed household the daughters in law

who were younger in age were educated up to eighth or tenth standard and very often knew a little stitching, painting etc., the trend is also fast moving towards marrying their sons to educated girls if a given chance.

One good point of awakening and its reflection was 95.3% of people believing that families with no sons are not unfortunate. Only 4.7% people believe that families without a male child are unfortunate. Around 91% respondents believe boys and girls to be equal around 30 respondents believe that the question of equality between the two does not arise and they are not equal.

**Table 6.14**

Age of girl to become a mother

age group	No .of respondents	Percentage of total (%)
<16	-	-
16-18	40	8
18-20	90	18
20-22	260	52
>20	no	22

Source: Compiled by the researcher

Sufficient awakening is also reflected in the answers given to the question. What do you think to be a suitable age for a girl to become a mother? 52% thought it to be between 20 and 22, around one -fourth i.e. 22% considered that more than 22 to be better age, 18% believe that a girl between 18 -20 years of age is fit to become a mother and 8% people still believe there is no harm for a girl between 16-18 years to become a mother.

Table 6.15

Age of a boy to become a father

Age group	No. of respondents	Percentage of total (%)
<20	-	0
20-22	-	0
22-24	25	3.9
24-26	320	50.0
>26	155	24.1

Source: Compiled by the researcher

On the other hand for boys age groups below 20 and 20-22 were absolutely ruled out. 64% people considered 24-26 years of age right for a man to become father. 31% believed a person should be above 26 years of age before he plans to start his family. Quite a positive change is visible in this aspect of social life. Definitely there is lot of awakening and people understand the advantages and disadvantages of starting a family earlier. Without giving a consideration to age and economic stability, the credit goes to the urban influence, media and increasing number of literates in the community, the efforts of health workers should also be recognized.

VI-5: OCCUPATIONAL TRANSFORMATION

It has been realized over the world that, as a forces of urbanization operates with the expansion of cities, the rural landline in the immediate vicinity of a city, undergoes change. Industrialization provides good jobs opportunities in the urban centers which not only gives rise to a very high natural increase of population, but also attracts immigrants of the

neighboring areas. The increased population gives rise to increased housing and other social amenities demand. All these forces lead to the growth of the sub-urban areas around the cities making a heavy demand on the rural land. Not only the land use pattern undergoes a change but also the occupational pattern changes considerably.

Occupational structure gets affected greatly but modernization and technological development in the rural areas and gradually the complexity gets increased. People are not restricted only to take a single occupation but sufficient diversification takes place. Generally, the pattern, which is observed, is such where the head of the household carries on with agriculture and the younger generation. People go for some newer occupation. Particularly with the expanding urban influence very often the new occupation taken up is in relation to urban lifestyles, dairy farming, poultry farming, horticulture service labour and other similar occupation gets an increasing trend. Specific questions were added up in the questionnaire to find this trend. Certain trends emerged out clearly during the survey. Firstly, farmers are increasingly adopting dairy farming as a main source of income and the subsidiary source. Secondly, taking up service in shops/factories/ transport agencies etc. is on the rise. Thirdly, more and more people are taking up labour as an important source of income depending on the socio-economic status either as the main source or subsidiary source.

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## **CHAPTER-VH**

### **SUMMARY AND SUGGESTIONS**

Agriculture being the largest industry and main occupation of the people has an important place in the economy of the state. It gives direct employment to 70% of the total working population of the state. Income from the agriculture and allied sectors accounts for near about 37% to the total state domestic product. But still in case of adoption of agricultural technology, the state lacks behind the neighbouring state. In some parts of the Eastern Uttar Pradesh, agriculture has remained unchanged for long historical epoch. The basic instruments of production have remained the same and uncertainty of rainfall made the cultivation dependent on irrigation. Due to such factors, farmers' have changed their agricultural practices in favour of high value crops. Hence, transformation of rural landscape and traditional farming has been the important part of agricultural development planning during the Five-year plan.

Therefore, the present study is dealing with the "Changing land use pattern and rural transformation" in Eastern Uttar Pradesh has come up with glaring conclusion regarding the trend of change in land use, cropping pattern, cropping intensity, production, productivity, level of development and its impact on rural development, income, family size, housing conditions, political and social awareness, mobility and expenditure on food consumption pattern. All such systems and their output are, if not totally in such greater part governed by the human

environment, which has always tried to minimize the initial role of physical environment and made it a resource for human welfare.

Land resources are of primary importance for agriculture and satisfying the needs of human life in particular. It has undergone many changes in the state over a period of time from 1980-81 to 2000-01. The over all agricultural land use pattern in the study area has increased. The area under forest cover has revealed negative rate of change in the study area due to may be pressure of population, bringing more and more area under cultivation and settlement. Besides the housing pressure, it was the infrastructures development (of roads, water pipes), which was also responsible. But this type of situation indicates not fit for the ecological balance. It creates ecological problem. The government is making all efforts to increase forest cover as much as possible. The districts of Mirzapur, Gorakhpur, Varanasi, Gonda and Bahraich are mainly confined to this category.

The land under non- agricultural use is not available for cultivation, though they are considered to be arable lands. It includes all such lands, which are under inhabitation, factories, under roads for transportation, canals and reservoirs. It has shown constant positive trend of change from 9.84% in 1980-81 to 10.82% in 2000-01 due to an increasing population, which has resulted an encroachment on newer areas for the construction of houses and buildings. The development works under taken by capital project authority of providing large open spaces interspersed with apartments serviced by wide roads and a liberal sprinkling of social and physical infrastructure increase the land under this category. The districts like Allahabad, Pratapgarh, Varanasi, Ghazipur, Deoria, Faizabad, Jaunpur, Azamgarh, Ballia is mainly confined.

Culturable wasteland constitutes very low percentage of area in eastern Uttar Pradesh while it shows increasing trend over the aiven

periods of time and has resulted an increase in the net sown area and this may be due to the variations in the incidence and amount of rainfall received.

Fallow land which is the most potential land for agricultural expansion. It is a part of cultivated land. But it differs from net sown area. The area under this category has shown declined over the given periods of time. The highest percentage of fallow land is found in the district of Allahabad.

In the net sown area of Eastern Uttar Pradesh, there has has shown a marked variation among the districts of the study area. The districts of Ghazipur, Jaunpur, Azamgarh, Ballia, Gorakhpur, Deoria, Basti, Faizabad have high proportion of area whereas the districts of Allahabad, Gonda, Bahraich, Pratapgarh have low proportion of area. The main factors of variations in the distribution of net cultivated of the region are soil and others are a continuous population pressure, an increasing demand of food grains. Area sown more than once in the study area has shown constant progress has been recorded over the given periods of time from 30.29% in 1980-81 to 33.43% in 2000-01. Gross cropped area has also shown constant increase in the eastern Uttar Pradesh i.e. 89.06 % in 1980-81 to 100.54 % in 2000-01.

From the above discussion various relations are observed between land use pattern and the level of agricultural development viz. very high to medium levels of agricultural development registered positive transformation of land use pattern low to very low levels of agricultural development highlighted negative transfonnation of land use pattern. Similarly, the relationship can further be drawn between land use pattern and population which reveals that the high density of population areas have marked positive transformation of land use pattern whereas medium to low populated areas indicate negative transformation of land use

pattern. Likewise the relationship between livestock and land use pattern has shown that the areas showing high density of livestock have recorded positive rate of change in land use pattern, while the areas showing low livestock density highlighted negative rate of change in land use pattern.

The agriculture economy of Eastern Uttar Pradesh remained unchanged for a long time. The basic instruments remained same, population pressure; uncertainty of rainfall made cultivation dependent on irrigation and crop pattern closely followed the soil and climatic pattern. Even then, agriculture has shown rapid transformation in its areal expansion and it has adjusted to the changes as a consequence of overall development. Hence, the agricultural transformation has been observed with respect to area, production and productivity in food and non-food crops in kharif and rabi seasons, especially in case of cereals crops, fruits, vegetables etc. But there is still a considerable scope for horizontal expansion of agriculture by bringing substantial proportion of wasteland, culturable wasteland and fallow land under crop cultivation with the help of modern technique.

Similar to land use, the cropping pattern in the Eastern Uttar Pradesh has undergone change. The agricultural transformation during kharif and Rabi seasons are marked by positive rate of change in the study area from 1980 to 2000 but tremendous changes has been made during 1980 to 1990 due to much more development of tube wells, irrigation facilities. Due to physio- climatic and techno- institutional variations, the transformation of area under agriculture is highly variable in different parts of the study area. The area and production under food crops have shown positive rate of change in the whole eastern Uttar Pradesh. Due to green revolution, considerable changes have been taken place in cropping pattern and production in the study area as well as the whole state.

The analysis of area under total food grains is of great significance because it plays an important role in projecting the output from agricultural sector to meet the food requirement in the study area and the state. On the whole, the area and production under total food crops have witnessed positive transformation in the state. From the above discussion we arrive at some important point that the relationships between the food crop and non- food crop in kharif and Rabi season. Wherever, the area has increased the production has also increased, and whenever the area of non-food crops has increased the production has decline due to the declining trend of yield. Similarly, the relationship between area and population is straight-forward in revealing that, in densely populated regions, the area under agriculture has highlighted positive trend of transformation and in sparsely populated region, the area under agriculture has depicted negative trend of transformation.

In the food crops, cereals play a dominant role in the economy in general and farmers in particular. The area and production of cereal at state and regional level pointed out positive transformation. The pattern as revealed by cereals is not the same when the individual crops are compared for further details. The area under rice crop cultivation has increased in the whole study area as well as the state due to the high yielding rate. The production of rice has also increased in the entire study area due to regular monsoon, using good quality of seeds, using good quality of fertilizers etc. The wheat crop is a important cereal crop grown in the study area. The area and production under wheat crop cultivation has increased in the whole study area as well as the state due to the high yielding rate, regular monsoon, using good quality of seeds, using good quality of fertilizers demands of the products etc.

When the matter of pulses has come, there is found different type of situation and the situation is not very encouraging when spatio-

temporal analysis is done for the cultivation of pulses in the study area. The area under pulses has shown decline in the state due to low yielding rate and substitute available for consumption is much cheaper such as leafy vegetables and potatoes.

In Eastern Uttar Pradesh, it has been found that in recent years the demand for food grains is not increasing because of greater production. All the districts have per head per annum higher production than the standard requirement. But if we see the production pattern of cereals and pulses in Eastern Uttar Pradesh since 1980-81, we find a different pattern of production of cereal and pulses. It has been found that in 1980-81, there was deficit condition in per head share of cereals and pulses in most of the districts. Only two districts namely Deoria and Gorakhpur presented positive condition. But in 2000-01, per head share of cereals has increased more than hundred percent in all the districts and per head share of pulses decreased from 1980 to 2000. Thus at present, there is no shortage of cereals in the region and the region has sufficient production of cereals than the requirement for the total population. But the per head pulses production has decreased in most of the districts of Eastern Uttar Pradesh from 1980 to 2000. The main cause of decrease in pulses production is the decrease in area under pulses and it is due to low yielding rate. It has been found that a large area under pulses has been replaced by wheat and rice. Because the productivity of wheat and rice has increased many times by new agricultural technology. This is the major cause that is why the production of cereals has increased in eastern Uttar Pradesh while the production of pulses has decreased. Thus from the study, two points emerge- one is that there is adequate cereal production in the region than the requirement and other is pulses production is less than the requirement. The pulse prices, at present are very remunerative to the farmers but it is the risk of crop failure due to

pests and disease which discourage the farmers to cultivate the pulses in the large scale. Therefore, it is essential for the agricultural scientists to bring about a technological breakthrough as in the case of wheat and rice by developing more high yielding and pests and disease tolerant varieties of pulses. Keeping this view in mind, a number of improved varieties of pulses have been developed and they have checked the declining trend in areas where irrigation has been introduced. Now, the major task lies in motivating the farmers to adopt the pulse production also just like the wheat and rice. Similarly, there is a need to introduce short- duration varieties of pulses both under irrigated and un- irrigated conditions. This will help greatly in increasing the pulse production in Eastern Uttar Pradesh. As far as cereals production is concerned, there is adequate production in the study region. There is no any shortage of cereals in Eastern Uttar Pradesh at present. It has been possible mainly due to the high yield and higher growth rate of production by the new agricultural technology. But this adequate food grain production is not available to all the people at all times for an active, healthy and prosperous life. Poverty has been one of the major causes for this poor food security. More than seventy percent population lives in rural areas and is engaged in agricultural activity. This population, by and large, is characterized by dirt, disease, mal-nutrition, and ignorance illiteracy, lack of resources for improvement and development and very low rate of capital formation, considerable unemployment and more under employment and very low percentage of rural people to take advantage of science and technology because they have neither resources nor the adequate knowledge. Acute and chronic under nutrition and most macro nutrients deficiencies primarily affect the poor and deprived people who do not have access to adequate food , live in unsanitary environment , without access to clean water and basic services and lack of access to appropriate education,



capital, communication and information. In developing countries where approximately two- third of population lives in rural areas, increased production of food for family consumption or as a source of income helps to stabilize food price and improved marketing facilities can also contribute the food security. Thus there is a need to improve the socio-economic conditions in rural areas and it will ultimately offer and opportunity for better income and employment generation.

Sugarcane is one of the important commercial crops of the state as well as of the whole Nation and it has become the most important crop of some districts of the study area. This is due to well development of sugar mills in the study area. The area has reveals the positive change in this crop due to much more demands of the product and high yielding. The government also motivated the farmers towards this crop by providing many new incentives at the subsidy rate and due to this, the fanners attention is much more come forward towards the sugarcane for their prosperous life and due to this, the area is transformed from the area of other crops but only in those districts of the study area where well development of sugar mill has been made.

From the above discussion it can be inferred that wherever the area under cereals have increased, then at the same time the area under pulses has declined in the study area as well as in all the states. The positive and negative trend of area has been further revealed that with the increase in area and production, the productivity based on calorie and money value for cereals and cash crop also increased in the study area.

After the green revolution, the region has made drastic changes in all socio-economic factors. The serious problems in India are the regional disparities and it causes social, economic and political instability. This problem is found everywhere in India. As far as the development of this study area is concerned, there is considerable spatial disparity in the level

of development. Development in terms of industrialization, urbanization communication and other sectors are found only in few areas while the others are backward. In present study both techniques qualitative and quantitative have been used. These techniques are simple statistics and composite index and they are used for the assessment of socio- economic development and agricultural development in Eastern Uttar Pradesh. Such type of study provides a base for National planning and helps researchers, administrators, policy makers and planners to identify regions, at different levels of development. An analysis of the study area to identify the backward regions, to measure the levels of sectoral and overall development and extent of disparities in Eastern Uttar Pradesh, has been made on the basis of various socio- economic levels of development for the year 1980 to 2000. With the help of this analysis, it has been found that there is general development in socio- economic fields. But this development is not uniform in all the districts. The indicators, which are used for this purpose, are agriculture, industry, education, health, communication, transportation, powers etc. These indicators have not been developed in uniform pattern in all the districts. Some are highly developed and some are less developed. Similarly, some districts are developed and some are not developed.

Agriculture, industry, education, health, communication, transportation, power sectors etc. have made high and moderate development in most of the district of eastern Uttar Pradesh. The industries have made high and moderate development in Allahabad, Varanasi, Gorakhpur, Deoria, Mau, and Sonbhadra. While in the remaining districts the development of industries was low. Similarly, health sector also made high development in Allahabad, Varanasi and Gorakhpur and moderate development in Ballia, Basti, Faizabad, Pratapgarh and Sultanpur. In general, the districts of central and north-

western parts have made less progress than the districts of other parts of the study area. There are different factors for the different types of development in different sectors. For example in the fields of agriculture less development in some districts is due to unfavorable topography, problems of floods and famines, lack of capital and lack of diffusion of agriculture etc. less development in industries is attributed to the fact that there is a good development in agriculture and more than 70% population is engaged in agricultural activities. The educational development is generally related to urban centers and hence high-level development is found in those districts, which have large number of settlements in terms of population and rural areas have low level of educational development. Transport and communication in general have made good progress in most of the districts. Only few districts such as Basti, Gonda, Mirzapur, Siddharthnagar, Deoria have made slow progress. The development of these sectors depends on the government policies and programs and ultimately government policies are not the same for all the districts. Level of regional development show many dimensions of progress and stagnant. There are found strong contrast in the level of development between different regions of the study area. A contagious region of high level of development is observed in the southern part of the study area which is relatively prosperous and well developed while the other regions are moderately developed. The general pattern of the levels of development shows a decline in the economic and social well being in some districts like Bahraich, Basti , Gonda, Maharajganj and Siddharthnagar. The high level development is found in Allahabad, Varanasi, Sonbhadra, Mirzapur, Gorakhpur and Azamgarh. These districts attained the high level development in 2000-01. Similarly the districts of Pratapgarh, Ballia, Deoria, Faizabad, Sultanpur, Jaunpur and Ghazipur recorded the medium level development in 2000-01. Five districts namely Bahraich, Gonda,

Basti, remained in low level category because of less development of agricultural, economic and social facilities and amenities.

The rural development in Eastern Uttar Pradesh is based on the development of certain locations of primary and secondary activities, so that these locations act as growth centre and they will provide multiplier mechanism in the transformation of rural areas in general and rural poor in particular. Hence, in agriculture various growth centre have been created for diffusion of innovation and balanced agriculture in the state. When transformation is compared in area under food grains, income and people below the poverty line. Firstly, the areas which are showing positive transformation under food grains, the share from agriculture has increased and side by side there has been decline in people and number of families below the poverty line.

In the present study, an intensive fieldwork was conducted on 500 respondents of 30 selected villages based on scheduled questionnaires. It revealed meaningful and interesting results pertaining to their personal and household characteristics, farming characteristics, level of innovativeness in farming, occupational transformation, the process of urbanization in the villages and social transformation particularly their attitudes regarding marriages, family planning, and status of girl child, religiosity, and exposure to mass media, household condition and level of crime. Besides the above noted characteristics the researcher gathered additional information through observation. In this study around 60% of the respondents belonged to the upper middle and old age groups since they are the heads and the leaders of the family major decision makers. Majority of the respondents belonged either to the OBC's or scheduled caste, higher caste Hindus and Muslims also constituted some percent of respondents. Nearly 70% of these respondents were either illiterate or less educated and their average family size ranged between 5-9 members.

Around 50% of total respondent belonged to the category of landless or marginal farmers with land holdings less than 2 acres. About 50% of the respondent reported that the cropping pattern has changed over the years while 30% believed it did not and around 20% gave no answer to this question. The cropping pattern and agricultural productivity depends on level of innovativeness of the farmer and their capacity to use modern technology. So the above stated factors would have definitely helped in decreasing the area under culturable wasteland category and hence reported decrease in the uncultivated land.

Majority of the respondent in this study area were found to be very less innovative. Very small size of land holdings and poor agricultural produce can be accounted for the above fact. A substantial percentage of respondent were moderately innovative giving a clear indication that those who can afford, do use good quantities and qualities of fertilizers and pesticides and hire tractors, harvesters etc., only 20% of the total respondent were reported to be highly and very highly innovative. On the whole, the trend is towards being more innovative. Village wise analysis reveals that villages on the immediate doorstep of Eastern Uttar Pradesh. For a complete analysis of socio-economic transformation, an assessment of the social attributes of the residents, of village was essential. Among various social parameters, educational levels, attitude towards marriage, attitude towards family planning, religiosity and social mobility were considered. Since status of women in a society is a good indicator of the level of social progress, straight-forward questions regarding the status of the girl child were included in the study. With the change in socio-economic life style, the number and nature of criminal activities also change. Hence an effort was made to understand all these forces underlying the socio-economic pattern of these villages.

Housing condition can be a good indicator of the socio-economic conditions of people. Based on several questions of diverse nature and using a scoring scheme, the respondents were grouped into three categories of poor, moderate and good housing condition. An urban influence in the life-style was clearly observed and felt by the researcher. Most of the houses were single story kutch-pucca houses. Two thirds of the total respondents reported poor housing conditions; 18 percent a moderate condition and 16 percent a good housing condition. A great desire to emulate the city dwellers in general life-style among the villagers was felt by the researcher. Various means of the mass media play an effective role in diffusing information and affect the knowledge, attitude, opinion and behavior, which in turn affect the level of adoption of innovations and technology, leading to positive economic change. Majority of the respondents were found to be moderately exposed to them. Television sets were present in most of the houses. News papers were generally read public places and radio sets and cinema also formed very popular means of mass communication. Of course, the level of literacy and purchasing power of the respondents did affect their level of exposure to mass media.

The field survey proved the general assumption that the degree of religiosity goes on decreasing among the people with increasing urban influence. The responses to various questions pertaining to religious practices of the respondents reinforced the fact that higher urbanization leads to reduction in the strict following of religious rules. Based on scoring scheme by which all responses were brought to a uniform level, 37 percent of the total respondents belonged to the category of being least religious. Around 75 percent respondent said that they follow religious rules in day to day life partially, only 18 percent follow the rules fully and 7 percent respondents said they do not follow the rules.

at all. Interestingly a very distinct urban influence in matter of religiosity is getting represented in great pompous activities of jhanki during durga pooja although the level of religiosity is on decline in day-to-day life.

Marriage is another important social parameters, which is strongly interwoven in the social fabric. It acts as one of the best parameters to analyze the social transformations. Various related aspects of marriage, such as age at marriage, nature of marriage, location and place of marriage, process of marriage, dowry system etc. have undergone a change. By and large, preference of child marriage, closure distance with the caste open dowry demand and general decoration, food served etc. are undergoing drastic changes with a little difference among various castes. The index of change in attitude of people towards marriage reveals that around two thirds respondents have higher degree of change in all aspects mentioned above. The marriages in general have become very costly affair in matters of decoration, food served and photographers, video film and so on. One good trend that was noticed among the villagers was the growing the practice of "Samoochik vivah" which is definitely a very bright ray of hope.

Closely related to attitude towards marriage is the attitude towards family planning. The level of awareness was extremely high that is 89 percent of the respondents were aware of these practices but only 83 percent choose to adopt it. Indian society being male dominated the respondents considered it to be women's responsibility to adopt these measures. Most of the respondents i.e. 94 percent agreed that small family is a happy family and one should go in for adopting these measures. But the difference was in the concept of small family; they believe family planning measures should be adopted after 3-4 children.

Status of the girl child is one of the indicators of social transformation. In this study area very positive change in this regard was

observed. The survey revealed that 97 percent of respondents were in favour of sending their daughters to school and there was no deliberate discrimination against them. Only if the economic condition did not permit, the girls were either not sent to school or were sent to government schools, while the boys were sent to English medium private/public schools. People did express a desire for their daughter to take up some profession like teachers, doctors, lawyers and so on. This was a definite positive change. Sufficient awakening as regard to their concern for the girls to become mother was reflected in their answers. Around two-third respondent believed that a girl should become a mother only after the crossing the age of 20 years.

When societies transform, they become heterogeneous in nature, the existing social controls get minimized, comparisons become stark and there exists revolution of aspirations among the people. These all factors at times may result in greater criminal activities or behaviors. Crime may not always be a physical action, it could be an attitude, a feeling or an emotion. Survey revealed that although criminal activities have not increased drastically but a general feeling of insecurity and uncertainty was prevailing among people. Intoxication of several pan masalas, biri, and tobacco even in remotest villages in the age groups of 10 to 40 years was clearly reported. Possession of arms particularly rifles and pistols are a growing status symbol among villagers.

Occupational structure is one of the major indicators of level of development and transformation. Agriculture and allied activities are of course the main occupation but the latest trend among the people is of occupational diversification. The older generation takes up agriculture; the middle generation takes up occupation like poultry or fishing or dairy development etc. and the younger generation aim for either some small business or service in the neighboring city. Labour is emerging as one of



the major economic activity. People take up different kind of works anywhere within their commutable distance and complete it within stipulated time period. It is more lucrative to them and tension free for the employer. Dairy farming and poultry farming are popular occupation being practiced on commercial and subsistence basis. The younger generation not only prefers service but also tries hard to get it.

## **RECOMMENDATIONS AND SUGGESTIONS.**

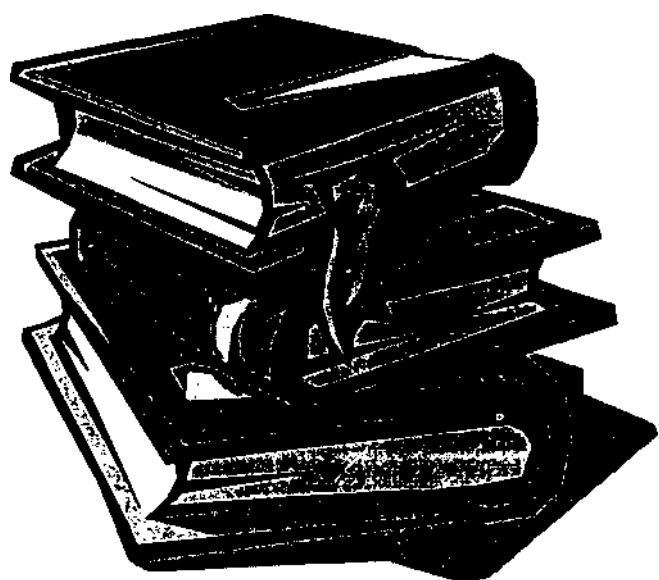
The overall picture that emerges out of the investigation proclaims that the prevailing agricultural system in Eastern Uttar Pradesh has to be made more meaningful for accelerating the pace of socio-economic development of the masses in general and the farmers in particular. The stagnation of traditional agriculture, poor socio- economic level of the people in the villages has long been pre-occupying the minds of the policy makers and the political leadership. Now they can hardly afford to ignore the conclusions drawn by the scholars of diverse disciplines while the present investigation approaches the problem from different angle viz., land use planning, improving the existing farming systems, crop planning, tree cropping and public participation.

1. People need land and water for obtaining their requirements of food, fodder, raw material as well as for providing necessary shelters. The need for proper land use for sustaining a reasonable and sustainable base of economic development.
2. The land must be used according to its capability and the land use plans should be generated based upon soil capability and water resource profile.
3. We should try to improve the access of land and other natural resources.

4. The marginal and sub- marginal lands, which are being utilized for agricultural crops, should essentially be diverted to agro-forestry or grassland development.
5. There is a need of scientific and rational designing of crop combinations so that the farmers get the maximum return from the available water, nutrients and solar resources.
6. We should accelerate growth in food and agricultural sectors and promote rural development.
7. High yielding variety (HYV) of seeds must be introduced and provided at subsidy rate through which the farmers motivate themselves towards the pulses to tackle the situation properly with this vital source of protein among the under-age population of the region.
8. Storage facilities should be developed at the district level as well as block level or tehsil level.
9. In suitable areas, fruits tree can be combined with other trees, for helping the growers in getting maximum cash return from the land. In addition, supplementary activities like beekeeping, mushroom growing, raising of grasses for fodder can be thrive well with any type of other agricultural enterprise.
10. The transport, communication, education, health facilities should also improved in rural areas through which the life becomes prosperous and full of joy.
11. Government should make such policy of loans at subsidy rate for the development of small scale and cottage industry.
12. Rural development programmes, agricultural transformation must bring additional income to the farmers because benefits from the strongest incentives for change in the behaviors of human beings.

Hence, people have to be educated to accept modern needs and practices.

On the basis of above recommendations and suggestions, it could be said that if these measures will be adopted honestly, then the study area will be in a position to become self-sufficient, can generate employments and hence, most of the population would be in a position to achieve political, economic and socio-cultural harmony and can be prosperous.



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# QUESTIONNAIRE

## (A) General Information

- Name of the village\_\_\_\_\_
- Name of the respondents-
  - (a) Age-
  - (b) Caste-
- Education
  - (a) formal
  - (b) Informal
- Total members of the household

Age group:	0-15	16-30	31-60	>60
	M F	MF	MF	M F
Members	_____			
- Educational qualification of household members :

PRIMARY	MIDDLE	Hr.	Sr.	Higher	Any
		Sec.	Sec.	Education	other
- Agricultural land holdings (Area in\_\_\_\_\_ -)

Type of holding	irrigated	unirrigated	total
Land owned			
Land leased in			
	(i) share		
	(ii) Rental		
Land leased out			
	(i) share		
	(ii) Rental		

**(B) FARMING CHARACTERISTICS AND AGRICULTURAL STATUS**

- Pattern of land use in kharif season (Area in\_\_\_\_\_)  
Major crops irrigated/unirrigated sources of irr. Yield/area

» Pattern of land use in rabi season (Area in\_\_\_\_\_)  
Major crops irrigated/unirrigated sources of irr. Yield/area

Has your cropping pattern changed in last ten years? Y/N

If yes, give details\_\_\_\_\_

Wliich crops you were growing earlier?\_\_\_\_\_

Has the yield of your crops: Increased/ same/ Decreased?

Agricultural implements owned / hired

- Chemical fertilizers: Kharif Season Rabi Season  
\_\_\_\_\_/^j^t Crops Area Amt. Crops Area

- New varieties Kharif Area Rabi area  
of seeds Season Coverage Season Coverage

Name	Amt.	Crops	Area	Amt.	Crops	Area
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(C) **ECONOMIC TRANSFORMATION (INCLUDING  
OCCUPATIONAL TRANSFORMATIONS  
PAST AND PRESENT)**

Kindly give the following information about the family members

	Variables	Head of the	Sons	Grandsons	Daughter
S.N.	household				
1	Present occupation				
2	Place of work				
3	Distance				
4	Means of transported				
5	Previous occupation				
6	Reasons of change				
7	Income differential				
8	Change since when				

Subsidiary occupation/ Main occupatior					
S.N.	Variable/ occupation	Dairy farming	Poultry fanning	Fishing	
1	Since when				
2	Commercial/ subsister				
3	Details -no. of animals/birds- amount of product				
4	Avg .income permanent				
5	Place of sale				
6	Do you purchase /sale Place of purchases Place of sale				

- Is labour your main occupation? Y/N
  - (i) If yes since when?
  - (ii) Where - within village/outside the village/ both the places?
  - (iii) Do you go as a seasonal labourer outside your village? Y/N
  - (iv) How much do you earn in a month?

- (v) Do you work as: agricultural labourer/  
construction labourer/any other?
- (vi) Do you practice as labour on: daily wage basis/  
contract basis?
- (vii) Which is more profitable?

Other occupations :

(i) Is any member of your family in services'^  
Y/N

(ii) If yes

Number	Nature	of	Place	of	distance	salary
	job		work			

(iii) Does he stay at the place of work? Y/N

If yes, alone /with his family

(iv) Does he send some money back at home? Y/N

## (D) SOCIAL TRANSFORMATION

- Attitude towards marriage.

(i) What should be the age at the time of marriage ?

Boy\_\_\_\_\_Girl\_\_\_\_\_

(ii) At what age, marriage used to take place :

(a) 5 years back.

Boy\_\_\_\_\_Girl\_\_\_\_\_

(b) 10 years back.

Boy\_\_\_\_\_Girl\_\_\_\_\_

(iii) Do you want to marry your children in  
village/town/ city?

(iv) Is dowry system is prevalent in your community?

(v) Normally how much do you spend in the marriage of

(a) Boys. Now \_\_\_\_\_ 10 years back

(b) Girls. Now \_\_\_\_\_ 10 years back.

(vi) What are the major changes in the marriages now?

(vii) You prefer to marry your children with a  
Profession of

(a) Your profession

(b) Service

(c) Business

(d) Others

(viii) Do you like inter-caste marriage?

• **ATTITUDE TOWARDS FAMILY PLANNING:**

(i) Are you aware of family planning programme? Y/N

(ii) If yes: do. you practice it?

(iii) Who according to you should adopt it? Husband/ wife

(iv) Do you think small family is happy family?

(v) After how many children should one adopt it?

(vi) Would you adopt it, even if you do not have a son?

• **STATUS OF THE GIRL CHILD**

(i) Would you like to send your daughters to public school or government school?

(ii) Till what level would you like to educate her?

(iii) Would you want your daughter to become :

(a) Doctor

(b) Teacher

(c) Lawyer

(d) Civil servant

(e) Engineer

(iv) Do you think a person who has daughters is very unfortunate?"^

(v) At what age should a girl become mother\*^

(vi) Do you think sons and daughters are equal?

### **RELIGIOSITY:**

(i) Do you follow the religious mles in your routine life? Some  
what/ modernity/ greatly/ strictly

(ii) Do you offer special pooja before taking up a new job?

(iii) Do you go about janam patri in deciding about: Y/N'^

(c) At the time of marriage

(d) Adoption of new jobs

(iv) Do you think that the calamities in our life are result of our  
KARAM in the past and present life? Y/N

(ii) Is there a specific place of worship in your  
house?

(iii) Is there any change in your attitudes towards  
marriage? Y/N

(iv) Do you visit religious places outside your  
village?

Y/N which places?



- **EXPOSURE TO MASS MEDIA**

- (i) Do you watch T.V.^ Y,^. Cable connection -  
Y/N
- (ii) What are the programs & which are most  
favorite?
- (iii) Do you watch it along with your family'!
- (iv) How many movies do you see in a month?
- (v) D 0 you subscribe / buy Newspaper'^  
Y/N

If no, do you read it somewhere else?

- (vi) What are the news items which interest the  
most?
- (vii) Do you think that society is changing very fast? Y/N  
If yes- in what ways?

- **HOUSING CONDITIONS**

- (i) Type of house:
  - (a) Kutcha
  - (b) Pucca
  - (c) Kutcha-Pucca

(d) Hut

- (ii) If pucca, when did you make your house?
- (iii) Water supply- city water/public tap/ well/  
Handpump/tubewell etc.
- (iv) Lighting arrangement-electricity/ kerosene  
lamp / other.
- (v) Drainage system- open/ covered/ no drainage,
- (vi) Is it a single storied/ double storied?
- (vii) How many rooms are there?
- (viii) Do you have a separate: sitting room/  
kitchen/bathroom toilet/Bed room/cattle  
shed?
- (ix) Cooking fuel: wood/ cow dung/ coal/ oil gas/  
electric heater.

**PERSONAL PROFESSIONS: WITH YEAR OR PURCHASES**

Table	( ^ )	Sofa set	( )	Cupboard	( )
Scooter	( ^ )	Settle	( ^ )	Bicycle	( )
Moped	( : )	motor cycle	( )	Tractor	( )
Truck	( ^ )	Car	( I )	Tempo	( )
Bus	( ^ 1 )	Gas stove	( )	Oil stove	( )
Fan	( ^ )	Cooler	( ^ )	Telephone	( )
Television	( ^ )	Camera	( )	Radio/transistor	( )

• **CRIME AND OTHER MALADJUSTMENTS;**

- (i) Is theft a common feature in your village?
- (ii) Has it increased in past few years'^

- (iii) Is some litigation case going on in the count of yourself or your community? Y/N
- (iv) If yes : pertaining to
- (a) property disputes
  - (b) other familial dispute
- (v) Are some dowry cases reported in your community?
- (vi) Are you aware of any murder etc. done in the village in near past?
- (vii) Have some people of your village, indulged in dmg addict?
- (viii) Do you think the present times are full of insecurities?
- (ix) Do you think the crime level has increased in the village/ community?
- (x) Does T.V. contribute to criminal activities?